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THE AEROPLANE SPOTTER

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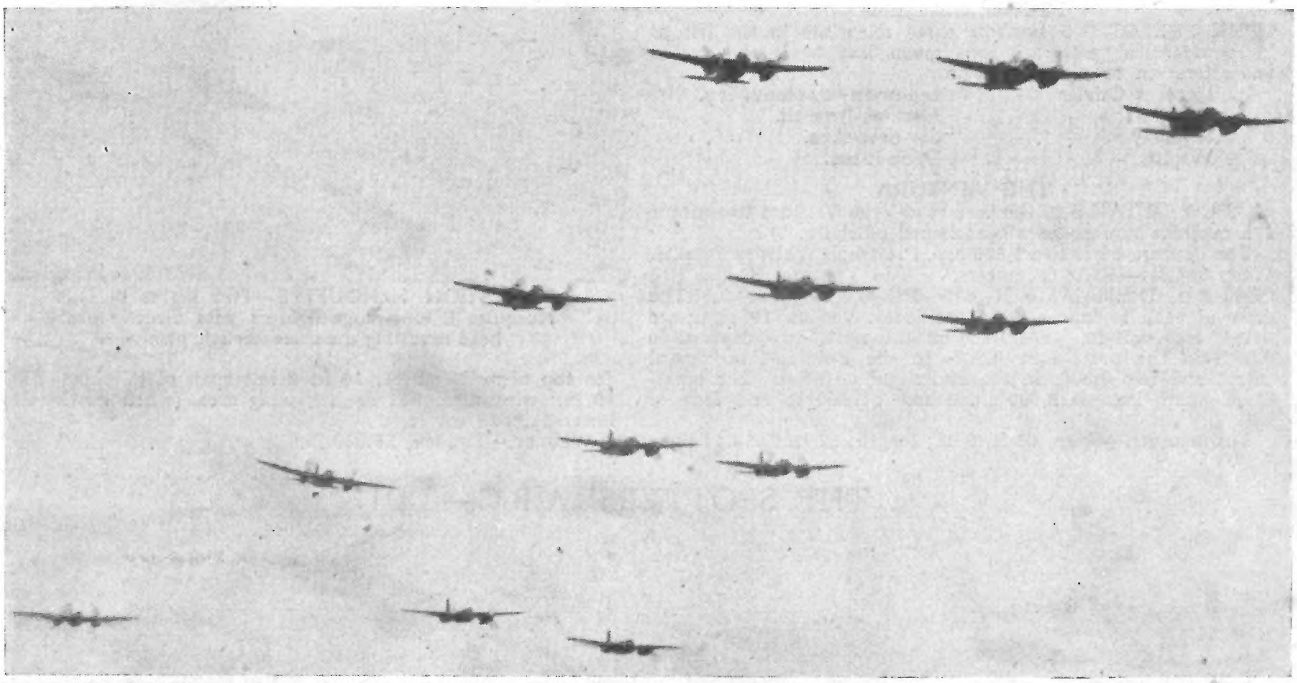


MOSQUITO FIGHTERS.—A squadron of de Havilland Mosquito II two-seat long-range fighters shows its paces. The Mosquito fighter is armed with four cannon and four machine-guns, and is unrivalled for a combination of speed, fire power, manœuvrability and range.

FOUR ALLIED aeroplanes of particular interest are now freed for mention and discussion. Each is of the highest technical quality and destined to play an important part in the War.

The four types are:—

(i) The de Havilland Mosquito (two Rolls-Royce Merlin 12-cylinder Vee motors), now in service in fighter, bomber, reconnaissance and trainer versions and the fastest aeroplane of any type in squadron service in any air force to-day.

(ii) The Hawker Typhoon (one Napier Sabre 24-cylinder H motor), flying as a fighter and as a fighter-bomber on day and night operations.

(iii) The North American Mustang (one Rolls-Royce Merlin 12-cylinder Vee motor), certainly the best and fastest American-built aeroplane to-day, reported now to be armed with four 20 mm. British Hispano cannon and equipped to carry bombs.

(iv) The Hawker Hurricane IID ground-strafer (one Rolls-Royce Merlin 12-cylinder Vee motor), armed with two 40 mm. Vickers cannon and two 0.303-in. machine-guns; the hardest-hitting aeroplane in the World.

All these aeroplanes emphasise Allied air superiority, which is founded first of all on the operation of the best aircraft in the World, and, secondly, on numbers. An interesting point is that of the four outstanding types mentioned above, three are powered with the Merlin engine, which has no equal for sustained power at height and for its tremendous output of horse-power compared with its small size and weight.

Apart from their power-plants, all the four types differ widely in their make-up and tactical applications. Many very experienced pilots judge the D.H. Mosquito to be the best aeroplane ever built, estimated on all-round performance and flying qualities. As a bomber it is faster than any fighter in the World; as a fighter it possesses a long range, combined with very high speed and powerful, concentrated armament. Its wooden construction has proved robust, easy to repair and quick to produce. Its production, both in England and in Canada, is more widely dispersed than that of any other type.

In an entirely different category, the Hawker Typhoon now stands fully revealed at last as the most powerful single-motor fighter in the World to-day and one of the most effective destroyers of bombers yet built. A great feature of the Typhoon is its scope for development—as the Hurricane before it. The Sabre, for all its 2,000-odd horse-power, is still a relatively new engine, and undoubtedly there is much more power to be had out of it yet, both low down and high up. Thus we should see the Typhoon steadily increase in speed and versatility. Already it is being used as a fighter-bomber and its size should make it capable of carrying big loads on this task. The Typhoon and the Spitfire, in its latest forms, make a magnificent team—both genuine 400 m.p.h. aeroplanes.

To them may be added the latest Mustang, equipped with a Merlin engine, to give greatly increased performance at height and more heavily armed than before. Built into the Mustang is a great amount of British experience, for its general specification came originally from this country. Now that it has the Merlin it reaches the front rank.

Finally, the Hurricane IID adds yet another to the long list of triumphs of this veteran. There is plenty of life in it yet. Even so, let us not become complacent. The German Aircraft Industry has a lot of fight left in it and will make desperate efforts to make up the leeway, and even get ahead. We have the best types now. Still better are needed constantly.

NEWS OF THE WEEK

BOMBING TOKYO

SIXTEEN North American B-25B Mitchell bombers of the U.S. Army Air Forces took off from the U.S. Navy aircraft carrier Hornet at 08.25 hrs. on Apl. 18, 1942, under the command of General J. H. Doolittle, who flew the leading Mitchell himself. The Hornet was then 800 miles from Tokyo.

The Mitchells reached Tokyo about midday and dropped their bombs successfully. Because the bombers were forced to take off 10 hours early and 400 miles farther from Tokyo than had been planned they were unable to reach China in daylight and all the bombers were lost. Of the 80 men who formed their crews, eight were taken prisoner by the Japanese, two are missing, one killed, five came down in Russia and the other 64 reached Chinese territory and thence rejoined the American forces.

PRONUNCIATIONS

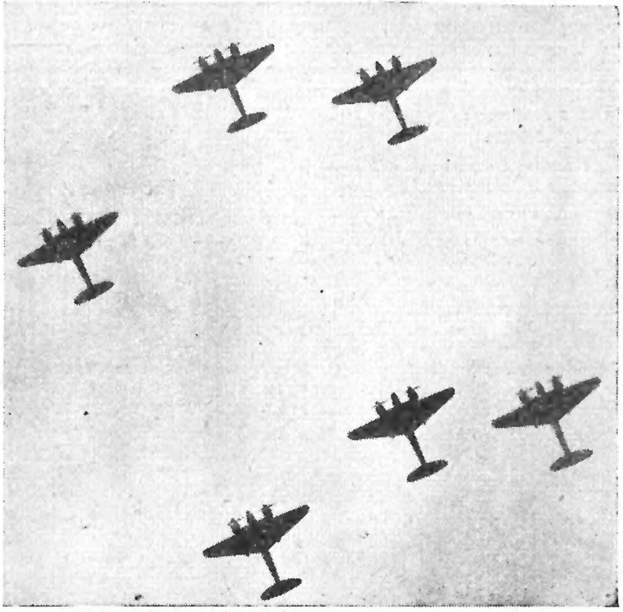
THE FOLLOWING corrects three misprints in the list of aeronautical pronunciations given last week and makes one alteration to a French word:—

Lioré et Olivier	**Lee-or-ray-ay-oleevv-iay.**
Nakajima	**Nack-eh-jyme-ah.**
Seversky	**Sev-erse-skee.**
Wapiti	**Wop-it-tee.**

THE VENTURA

A FEW DETAILS of the Lockheed-Vega Ventura two-motor medium bomber have been issued officially.

The Ventura I has two 1,850 h.p. Pratt and Whitney Double-Wasp R-2800—S1A4-G motors. The Ventura II has two 2,000 h.p. Double-Wasp R-2800—2SB-G (31) motors. The crew of each is four and in the latest version 10 guns are fitted, two 0.50-in. guns fixed in the nose, two depressible 0.303s in the nose, four 0.303s in the Boulton-Paul dorsal turret and two 0.303s in the under-gun position. The maximum bomb load is 2,500 lb. (three of 500 lb and four of 250 lb.).

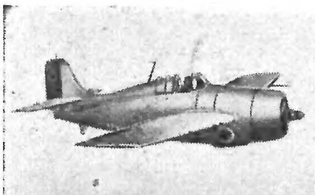


FORMATION SILHOUETTE.—Two flights of D.H. Mosquito II long-range fighters pass directly overhead revealing the characteristic plan view.

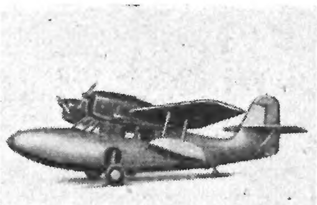
DIMENSIONS.—Span, 65 ft. 6 in.; length, 52 ft. 7½ in.; height (to top of radio mast), 14 ft. 2 in.; span of tailplane, 25 ft. 10 in.; wing area, 551 sq. ft.; wing area (when Fowler flaps lowered), 619 sq. ft.

WEIGHT.—Loaded, 26,000 lb.

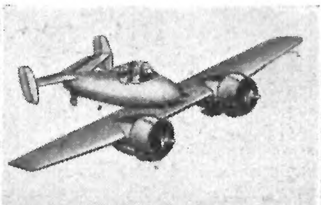
THE SPOTTERS' A.B.C.—LIII



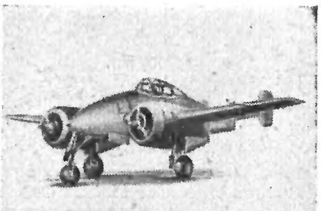
GRUMMAN F4F-3 G36A MARTLET IV



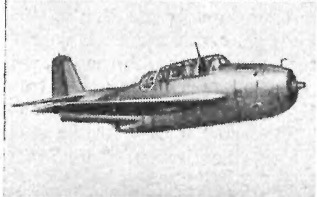
GRUMMAN G44 GOSLING



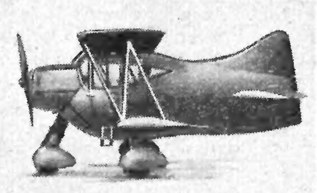
GRUMMAN XF5F-1 SKYROCKET



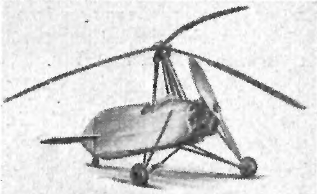
GRUMMAN XP-50



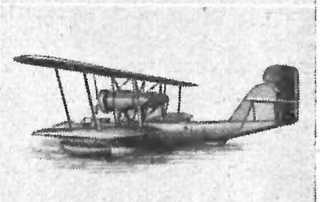
GRUMMAN TBF-1 AVENGER



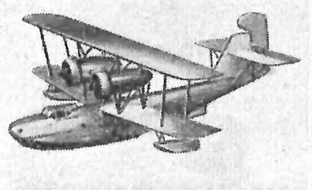
GWINN AIRCAR



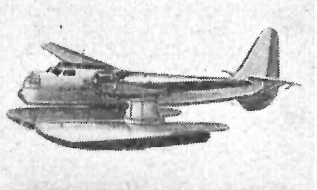
HAFNER A.R.III MK. II



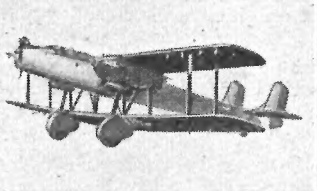
HALL PH-1



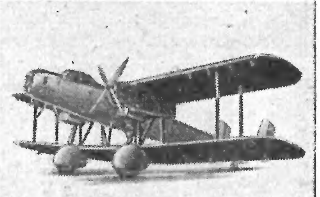
HALL PH-2



HALL XPTB-2



HANDLEY PAGE HEYFORD I



HANDLEY PAGE HEYFORD II

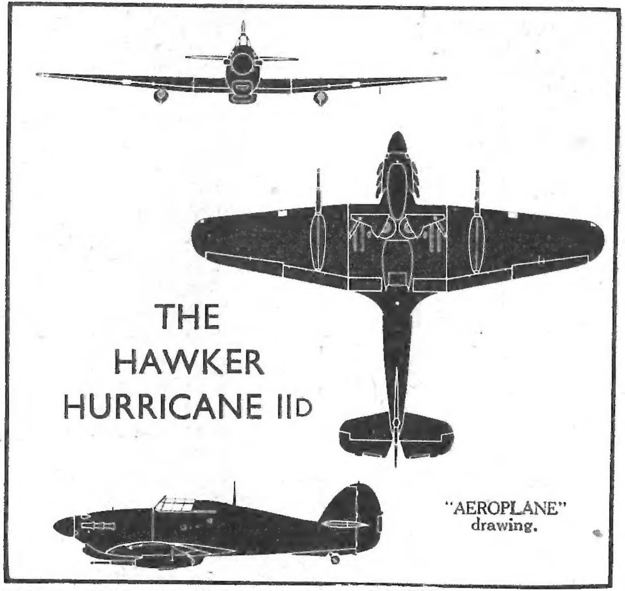
MOSTLY AMERICAN.—One of the best types of American fighter, the **Grumman Martlet** has done good work with the Royal Navy and, as the Wildcat, with the United States Navy in the Pacific. The top speed is 315 m.p.h. and the armament six 0.50-in. machine-guns. The **Grumman Gosling,** known in America as the Widgeon and as J4F-1, was designed as a lighter version of the Goose for private owners and light transport work. Now it is in service as an Air-Sea Rescue amphibian and Coast Guard type. There is accommodation for five and the top speed is 163 m.p.h. with two 200 h.p. Ranger in-line motors. Neither the **Skyrocket** designed for the Navy, nor its development, the **XP-50** for the Army, came to anything, although both were interesting types and were stated to reach more than 400 m.p.h. The two-motor single-seater is a bit of a handful for one man. The **Grumman TBF-1 Avenger,** which is also built by General Motors as the TBM-1, is without doubt the best carrier-based torpedo bomber in service to-day. It carries the American short 22.4-in. torpedo slung internally and has a top speed of about 250 m.p.h. with full load. The Avenger has been ordered for the Royal Navy and is being given the British name **Tarpon** because there was a carrier named the Avenger. The **Gwinn Aircar** was an American effort to build a foolproof light aeroplane which [636 would not spin or stall. Unfortunately, the famous pilot Frank Hawks was killed in it when he flew into some high-tension cables. The **Hafner Gyroplane** had the same type of engine as the Aircar—a Pobjoy Niagara—and approached the same problem from a different aspect. It had direct jump take-off and was very manœuvrable. The Hall Aluminum Aircraft Corporation of America is now absorbed into the Consolidated Aircraft Corporation. Several of its products are still in service in the U.S.A. The **PH-1** and the **PH-2** are two-motor patrol and rescue flying-boats now obsolete. They have top speeds of around 150 m.p.h. with two 875 h.p. Cyclone motors and are in the same class as the London and Stranraer flying-boats. The **XPTBH-2** is a patrol-torpedo-bomber seaplane. The top speed is about 170 m.p.h. with two 800 h.p. Twin Wasp motors. Several **Handley Page H.P.50 Heyford I** and **Heyford II** biplanes are still flying on communications work. They were designed as night-bombers with two 600 h.p. Rolls-Royce Kestrel motors. The Heyford II has improved cowlings and radiator arrangements and an enclosed cockpit. The Heyford I does 127 m.p.h., the Heyford II 136 m.p.h.

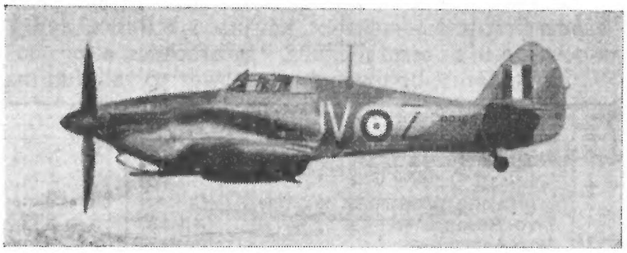
AIRCRAFT IN THE NEWS—LXXXIII

THE HAWKER HURRICANE IID

HAWKER HURRICANE IID fighters, armed with two 40 mm. (1.575 in.) Vickers cannon, have proved themselves to be the most formidable anti-tank aircraft yet devised.

The big Vickers guns are slung externally under each wing and fire shells weighing 2¼ lb. each. These hit their objectives with a punch equal to that of a two-ton lorry crashing into a wall at 55 m.p.h. As well as the cannon, the Hurricane IID has two 0.303-in. machine-guns mounted in the wings outboard of the barrels of the big guns. These machine-guns are used chiefly for getting the sights on to the target before opening up with the heavy calibre guns.





Naturally, the external armament reduces the performance of the Hurricane IID, the tropical version of which has a top speed of about 300 m.p.h. at 18,000 ft. with full load. While the guns are being fired the speed drops by about 40 m.p.h. Each gun weighs 320 lb.

Thus the Hurricane appears in yet another new form and takes on a further lease of life just as its successor—the Typhoon—comes into service on a large scale. Both the Typhoon and the Hurricane IID have now been on active service for many months.

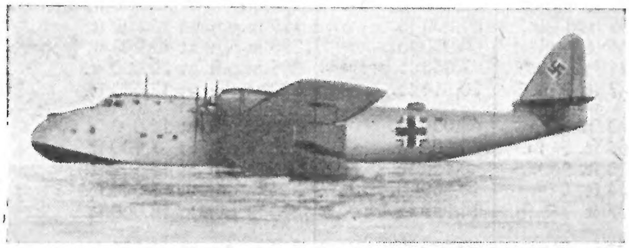
DIMENSIONS.—Span, 40 ft. 0 in.; length, 32 ft. 3 in.; height, 13 ft. 1 in.; wing area (gross), 257.5 sq. ft.; aspect ratio, 6.21.

PERFORMANCE.—Top speed, about 300 m.p.h.

POINTS OF RECOGNITION.—Low-wing monoplane. Dihedral on outer panels of wings attached to straight centre section. Finely pointed nose. High cockpit, from which top line of fuselage slopes down to rounded fin and rudder, giving humped-back effect. Inwards retracting undercarriage. Fixed tailwheel. Two cannon slung under wings.

CIVIL IDENTIFICATION—LXXXIII

THE BLOHM UND VOSS Bv 222



SMALL NUMBERS of Blohm und Voss Bv 222 flying-boats are in service with the Luftwaffe transporting freight and personnel to and from the German armed forces on their many widely scattered fronts from the far north of Norway south to the tip of Tunisia.

Design work was started before the War to provide long-range flying-boats, with spacious accommodation, for a trans-Atlantic air service proposed by Deutsche Luft Hansa, the German national air-line. When war came preparations for the manufacture of these flying-boats was continued although modifications were made to the original design converting them into military transports. The prototype crashed and was totally destroyed soon after the War began. Recently several have been destroyed in the Mediterranean area and only one or two can still be serviceable.

As in the case of the Luftwaffe's other recent addition to its fleet of air transports—the Messerschmitt Me 323 six-motor high-wing landplane—the Bv 222 has a maximum speed of less than 200 m.p.h. and an economical cruising speed of about 130 m.p.h.; both at a height of 10,000 ft. With more powerful motors this performance could be stepped up.

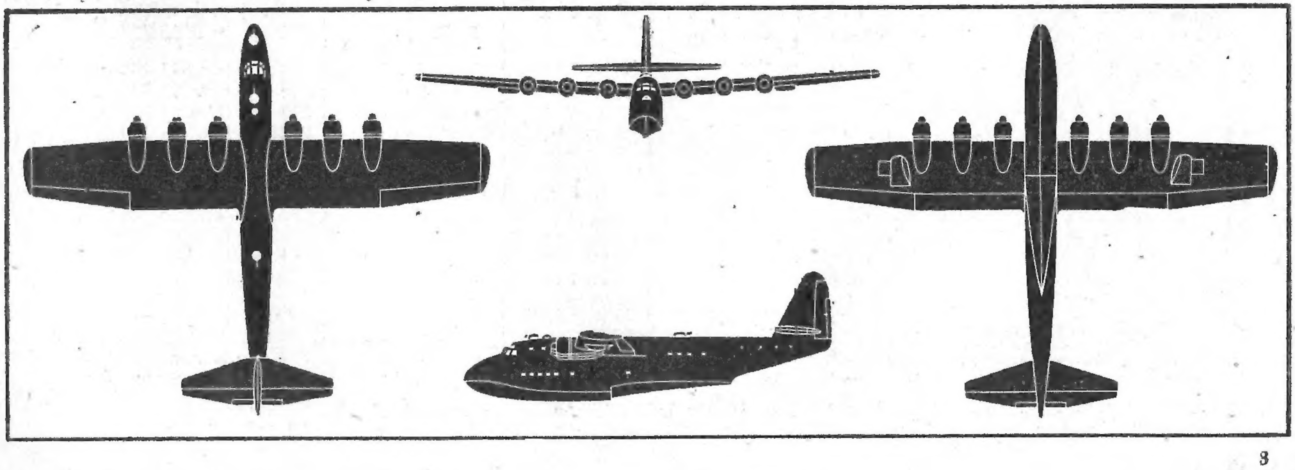
Six BMW 132 Dc air-cooled radial motors, each developing 1,000 h.p., are mounted along the leading edge of the cantilever mainplane. Ailerons extend outwards from the outer motors and flaps run along the rest of the trailing edge. Just outboard of the motors are shallow wells cut in the underside of the wings to house the semi-retractable stabilising floats. A cantilever tailplane is mounted a small distance above the hull on the single fin.

DIMENSIONS.—Span, 150 ft. 0 in.; length, 112 ft. 0 in.

WEIGHT.—Loaded, 100,000 lb.

PERFORMANCE.—Maximum speed, 175 m.p.h. at 10,000 ft.

POINTS OF RECOGNITION.—Six-motor high-wing flying-boat with long rectangular centre section and slightly tapered outer sections of the high aspect ratio mainplane. The hull is exceptionally narrow, is slab sided and is surmounted by a single fin and rudder with a sharply tapered leading edge. The tailplane, with tapered leading and trailing edge and square-cut tip, is mounted a short distance up the fin, which is set forward of the end of the fuselage.



SPECIFICATIONS OF THE BASIC 64

Below are the more important dimensions, weights, and performance figures* of the 64 British, American, and German first-line aeroplanes, advanced trainers, and gliders in the Third Class Proficiency Test of the National Association of Spotters' Clubs. In brackets, after the name of each machine, is the least amount of information which must be given as an answer to gain full marks in the N.A.S.C. test. No half marks are awarded.

NO.	NAME	SPAN	LENGTH	WEIGHT (loaded)	MAX. SPEED
1	Airspeed Horsa I – – – (Horsa)	88 ft. 0 in.	67 ft. 0 in.	lb.	100 m.p.h (approx. gliding speed)
2	Airspeed Oxford V – – – (Oxford)	53 ft. 4 in.	34 ft. 6 in.	7,300 lb.(approx.)	202 m.p.h. at sea level
3	Armstrong Whitworth Whitley V (Whitley)	84 ft. 0 in.	72 ft. 6 in.	27,900 lb.	225 m.p.h. at 18,500 ft.
4	Avro Anson I – – – – (Anson)	56 ft. 6 in.	42 ft. 3 in.	8,000 lb.	173 m.p.h. at 7,000 ft.
5	Avro Lancaster I – – –(Lancaster)	102 ft. 0 in.	69 ft. 4 in.	63,000 lb.	m.p.h. at ft.
6	Avro Manchester IA – (Manchester)	90 ft. 1 in.	70 ft. 0 in.	50,000 lb.	m.p.h. at ft.
7	Boulton Paul Defiant II – – (Defiant)	39 ft. 6 in.	35 ft. 4 in.	7,500 lb.	314 m.p.h. at 17,500 ft.
8	Bristol Beaufighter I – (Beaufighter)	57 ft. 10 in.	41 ft. 4 in.	20,800 lb.	315 m.p.h. at 14,000 ft.
9	Bristol Beaufort II – – – (Beaufort)	58 ft. 6 in.	44 ft. 7 in.	lb.	265 m.p.h. at 15,000 ft. (approx.)
10	Bristol Blenheim VD – – (Blenheim)	56 ft. 4 in.	43 ft. 8 in.	lb.	260 m.p.h. at 17,000 ft. (approx.)
11	de Havilland Flamingo – –(Flamingo)	70 ft. 0 in.	51 ft. 10 in.	17,600 lb.	239 m.p.h. at 6,500 ft.
12	de Havilland Mosquito IV – –(Mosquito)	54 ft. 2 in.	40 ft. 9$\frac{1}{2}$ in.	lb.	m.p.h. at ft.
13	Fairey Fulmar I – – – – (Fulmar)	46 ft. 0 in.	40 ft. 3 in.	lb.	244 m.p.h. at 17,500 ft.
14	General Aircraft Hotspur III – (Hotspur)	45 ft. 11 in.	39 ft. 3$\frac{1}{2}$ in.	3,600 lb.	90 m.p.h. (approx. gliding speed)
15	Handley Page Halifax II – – (Halifax)	98 ft. 10 in.	70 ft. 1 in.	60,000 lb.	m.p.h. at ft.
16	Handley Page Hampden I – (Hampden)	69 ft. 2 in.	53 ft. 7 in.	18,756 lb.	255 m.p.h. at 15,500 ft.
17	Hawker Hurricane IIC – (Hurricane)	40 ft. 0 in.	32 ft. 3 in.	8,400 lb.	306 m.p.h. at 18,000 ft.†
18	Hawker Typhoon IB – – –(Typhoon)	41 ft. 7 in.	31 ft. 11 in.	lb.	m.p.h. at ft.
19	Phillips and Powis Miles Master III (Master III)	35 ft. 8 in.	30 ft. 2 in.	5,400 lb.	232 m.p.h. at 7,500 ft.
20	Short Stirling I – – – – (Stirling)	99 ft. 1 in.	87 ft. 3 in.	71,000 lb.	m.p.h. at ft.
21	Short Sunderland II – – (Sunderland)	112 ft. 9$\frac{1}{2}$ in.	87 ft. 4 in.	45,700 lb.	210 m.p.h. at 6,250 ft. (approx.)
22	Vickers-Armstrongs Supermarine Spitfire IX (Spitfire)	36 ft. 10 in.	31 ft. 0$\frac{1}{2}$ in.	lb.	m.p.h. at ft.
23	Vickers-Armstrongs Wellington II (Wellington II)	86 ft. 2 in.	61 ft. 0 in.	lb.	245 m.p.h. at 18,000 ft.
24	Vickers-Armstrongs Wellington III (Wellington III)	86 ft. 2 in.	61 ft. 0 in.	lb.	263 m.p.h. at 14,000 ft.
25	Westland Lysander III – –(Lysander)	50 ft. 0 in.	30 ft. 6 in.	6,015 lb.	195 m.p.h. at 10,000 ft.
26	Boeing Fortress II – – – (Fortress)	103 ft. 9$\frac{3}{8}$ in.	73 ft. 9$\frac{5}{8}$ in.	60,000 lb.	290 m.p.h. at 25,000 ft. (approx.)
27	Consolidated Catalina I – – (Catalina)	104 ft. 0 in.	65 ft. 1$\frac{1}{2}$ in.	30,500 lb.	190 m.p.h. at 10,500 ft.
28	Consolidated Liberator III – (Liberator)	110 ft. 0 in.	66 ft. 4 in.	60,000 lb.	290 m.p.h. at 25,000 ft. (approx.)
29	Curtiss Kittyhawk II – – (Kittyhawk)	37 ft. 3$\frac{1}{4}$ in.	31 ft. 9 in.	7,000 lb.(approx.)	355 m.p.h. at 20,000 ft.
30	Douglas Boston III – – – (Boston)	61 ft. 4 in.	47 ft. 3 in.	20,314 lb.	320 m.p.h. at 13,000 ft.
31	Douglas Skymaster I – – (Skymaster)	117 ft. 6 in.	93 ft. 10 in.	64,000 lb.	285 m.p.h. at 16,000 ft.
32	Douglas Dakota I – – – (Dakota)	95 ft. 0 in.	64 ft. 5$\frac{1}{2}$ in.	30,000 lb.	210 m.p.h. at 7,900 ft.
33	Grumman Martlet IV – – (Martlet)	38 ft. 0 in.	28 ft. 9$\frac{3}{8}$ in.	6,100 lb.	310 m.p.h. at 15,500 ft.
34	Lockheed Hudson III – – – (Hudson)	65 ft. 6 in.	44 ft. 4 in.	18,500 lb.	254 m.p.h. at 5,000 ft.
35	Lockheed Lightning I – –(Lightning)	52 ft. 0 in.	37 ft. 9$\frac{15}{16}$ in.	14,350 lb.	360 m.p.h. at 18,000 ft.
36	Lockheed-Vega Ventura I – – (Ventura)	65 ft. 6 in.	51 ft. 2$\frac{1}{2}$ in.	26,000 lb.	275 m.p.h. at 14,000 ft.
37	Martin Marauder I – – –(Marauder)	65 ft. 0 in.	58 ft. 2$\frac{1}{2}$ in.	lb.	m.p.h. at ft.
38	North American Mitchell I – (Mitchell)	67 ft. 6$\frac{3}{4}$ in.	51 ft. 5 in.	24,000 lb.	275 m.p.h. at 13,000 ft.
39	North American Mustang I – (Mustang)	37 ft. 0$\frac{5}{16}$ in.	35 ft. 2$\frac{5}{8}$ in.	7,708 lb.	370 m.p.h. at 13,000 ft.
40	Republic Thunderbolt I – (Thunderbolt)	40 ft. 9$\frac{5}{16}$ in.	35 ft. 5$\frac{3}{16}$ in.	14,000 lb.	m.p.h. at ft.
41	Vought-Sikorsky Corsair I – (Corsair)	40 ft. 11$\frac{1}{2}$ in.	35 ft. 4 in.	9,146 lb.	366 m.p.h. at 16,500 ft.
42	Vought-Sikorsky Kingfisher I (Kingfisher)	35 ft. 10$\frac{11}{16}$ in.	30 ft. 1 in.	4,619 lb.	184 m.p.h. at 5,000 ft.
43	Vultee Vengeance I – – (Vengeance)	48 ft. 0 in.	40 ft. 0 in.	lb.	275 m.p.h. at 13,000 ft.
44	Arado Ar 196A – – – (Ar 196)	49 ft. 2$\frac{1}{2}$ in.	38 ft. 2$\frac{1}{2}$ in.	8,200 lb.	193 m.p.h. at 13,120 ft.
45	D F S 230A1 – – – –(D F S 230)	69 ft. 11 in.	37 ft. 0 in.	4,500 lb.	100 m.p.h. (approx. towing speed)
46	Dornier Do 17Z2 – – – (Do 17Z)	59 ft. 0$\frac{3}{4}$ in.	53 ft. 5$\frac{1}{2}$ in.	19,481 lb.	255 m.p.h. at 16,400 ft.
47	Dornier Do 18K2 – – – (Do 18)	77 ft. 9 in.	63 ft. 1 in.	30,000 lb.	186 m.p.h. at 7,200 ft.
48	Dornier Do 217E2 – – – (Do 217)	62 ft. 5 in.	56 ft. 6 in.	33,700 lb.	324 m.p.h. at 18,500 ft.
49	Focke-Wulf Fw 189 – – – (Fw 189)	60 ft. 4 in.	39 ft. 4 in.	7,480 lb.	222 m.p.h. at 8,530 ft.
50	Focke-Wulf Fw 190A3 – – (Fw 190)	34 ft. 6 in.	29 ft. 4 in.	8,580 lb.	390 m.p.h. at 20,000 ft.
51	Focke-Wulf Fw 200K2, Kurier II – (Kurier)	108 ft 3 in.	78 ft. 3 in.	48,500 lb.	235 m.p.h. at 16,400 ft.
52	Heinkel He 111H6 – – – (He 111H)	74 ft. 1$\frac{3}{4}$ in.	54 ft. 6 in.	27,400 lb.	254 m.p.h. at 13,000 ft.
53	Heinkel He 115K2 – – – (He 115)	75 ft. 11$\frac{1}{4}$ in.	57 ft. 0 in.	20,020 lb.	217 m.p.h. at 11,150 ft.
54	Heinkel He 177 – – – (He 177)	103 ft. 4 in.	67 ft. 3 in.	60,000 lb.(approx.)	270 m.p.h. at 19,000 ft. (approx.)
55	Henschel Hs 126 – – – (Hs 126)	47 ft. 6$\frac{3}{4}$ in.	35 ft. 7 in.	6,798 lb.	220 m.p.h. at 9,840 ft.
56	Henschel Hs 129 – – – (Hs 129)	44 ft. 6 in.	33 ft. 3 in.	9,700 lb.(approx.)	270 m.p.h. at sea level (approx.)
57	Junkers Ju 52/3mF – – – (Ju 52/3m)	95 ft. 11$\frac{1}{2}$ in.	62 ft. 0 in.	27,550 lb.	165 m.p.h. at sea level
58	Junkers Ju 86P – – – – (Ju 86P)	84 ft. 0 in.‡	53 ft. 0 in.	lb.	280 m.p.h. at 31,000 ft. (approx.)
59	Junkers Ju 87D1 – – – (Ju 87)	45 ft. 4 in.	36 ft. 5 in.	lb.	235 m.p.h. at 16,250 ft.
60	Junkers Ju 88A6 – – – (Ju 88)	65 ft. 7$\frac{1}{2}$ in.	47 ft. 1 in.	28,500 lb.	276 m.p.h. at 16,000 ft.
61	Junkers Ju 90S – – – – (Ju 90S)	137 ft. 6 in.	91 ft. 9 in.	55,000 lb.(approx.)	260 m.p.h. at 13,100 ft. (approx.)
62	Messerschmitt Me 109E – – (Me 109E)	32 ft. 3 in.	28 ft. 8 in.	5,590 lb.	354 m.p.h. at 14,760 ft.
63	Messerschmitt Me 109F – – (Me 109F)	32 ft. 8$\frac{1}{2}$ in.	29 ft. 8 in.	6,090 lb.	371 m.p.h. at 22,000 ft.
64	Messerschmitt Me 210A1 – – (Me 210)	53 ft. 9 in.	40 ft. 3 in.	21,350 lb.	365 m.p.h. at 19,680 ft.

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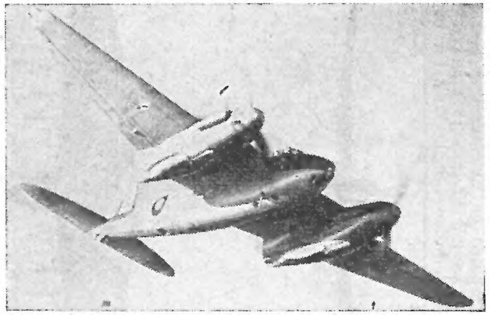
* Where figures are not yet available for publication gaps have been left. These can be filled in later as and when they are announced.

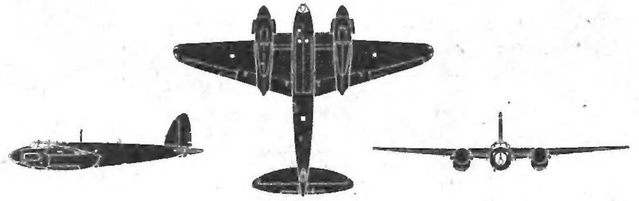
† Hurricane IIc tropical long-range version. Hurricane IIB has top speed of 340 m.p.h.

‡ Span of Ju 86P varies from 84 ft. 0 in. to 103 ft. 0 in., according to mark.

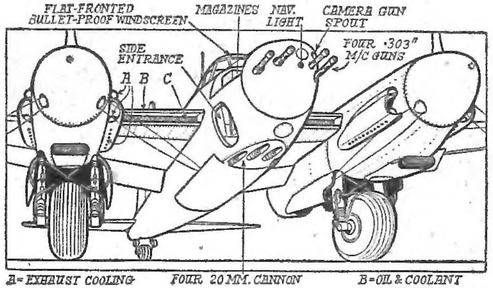
AEROPLANES IN DETAIL—XLVIII

THE DE HAVILLAND MOSQUITO IV (two 1,280 h.p. Rolls-Royce Merlin 21 motors)





"AEROPLANE" drawing


FLAT-FRONTED BULLET-PROOF WINDSCREEN
MAGAZINES
NAV. LIGHT
CAMERA GUN SPOUT
SIDE ENTRANCE
A B C
FOUR ·303" M/C GUNS
A=EXHAUST COOLING AIR INLETS
FOUR 20 MM. CANNON
B=OIL & COOLANT RADIATORS
C=AIR HEATER FOR GUN HEATING (CABIN HEATER IN PORT RADIATOR)

(Above: The Mosquito II Fighter.)

THE FASTEST AEROPLANE of any type in operation with any Air Force in the World to-day, bar none—that is the proud distinction of the de Havilland Mosquito with its two Rolls-Royce Merlin engines. Just how fast the Mosquito is we may not mention yet, but an indication of its prowess is given by the fact that a Mosquito bomber with 2,000 lb. of bombs and enough fuel to fly to Berlin and back is faster than any fighter in service. Furthermore, Mosquitoes have flown from the British Isles in time for lunch in Russia and flown back again the same afternoon.

Four basic mark numbers of Mosquitoes can be mentioned. They are:—

Mosquito I prototype bomber, with a wing span of 52 ft. 6 in. and short nacelles. Later Mark Is had the bigger span of 54 ft. 2 in.

Mosquito II fighter armed with four 20 mm. cannon and four 0.303-in. machine-guns. Long nacelles. Wing span of 54 ft. 2 in.

Mosquito III dual-control trainer.

Mosquito IV unarmed bomber. Bomb load 2,000 lb. stowed internally.

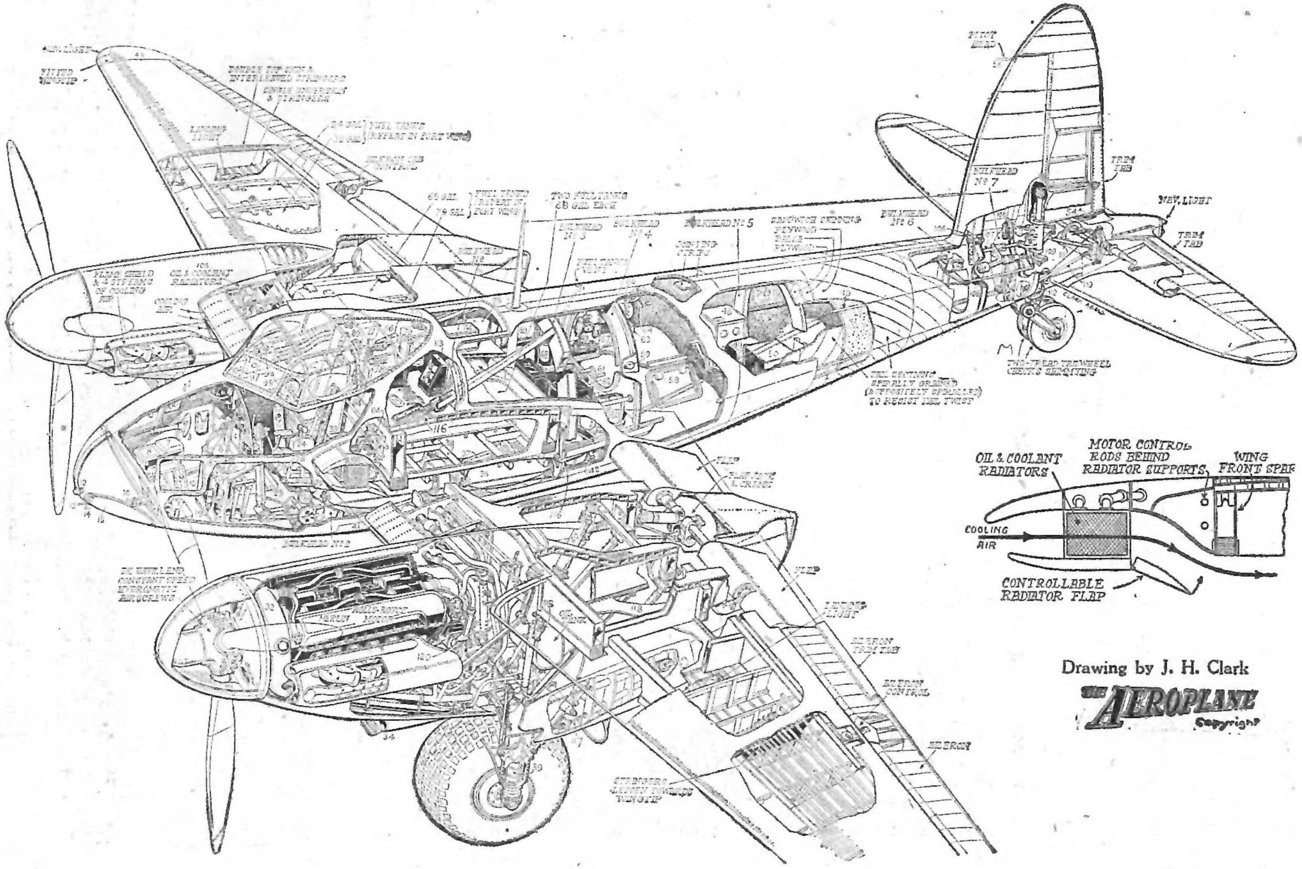
The idea of the Mosquito was conceived in the first month of the War by the de Havilland Aircraft Co. Ltd. and was submitted to the Air Ministry as a Private Venture design. Only 22 months elapsed between the date when the first drawing was made and the Mosquito's first operation against the enemy—a World's record.

The Mosquito is built entirely of wood, and is in production both in Great Britain and Canada. It is certain to go down to history as one of the great aeroplanes of this War.

Besides the standard day bomber form it is in service as a heavily armed long-range destroyer, as a fighter-bomber, as a night intruder and for day reconnaissance. Mosquitoes are operating with all three Home Commands to-day—with Fighter Command, Bomber Command and Coastal Command and they are also doing fine work in the Middle East flying from Malta.

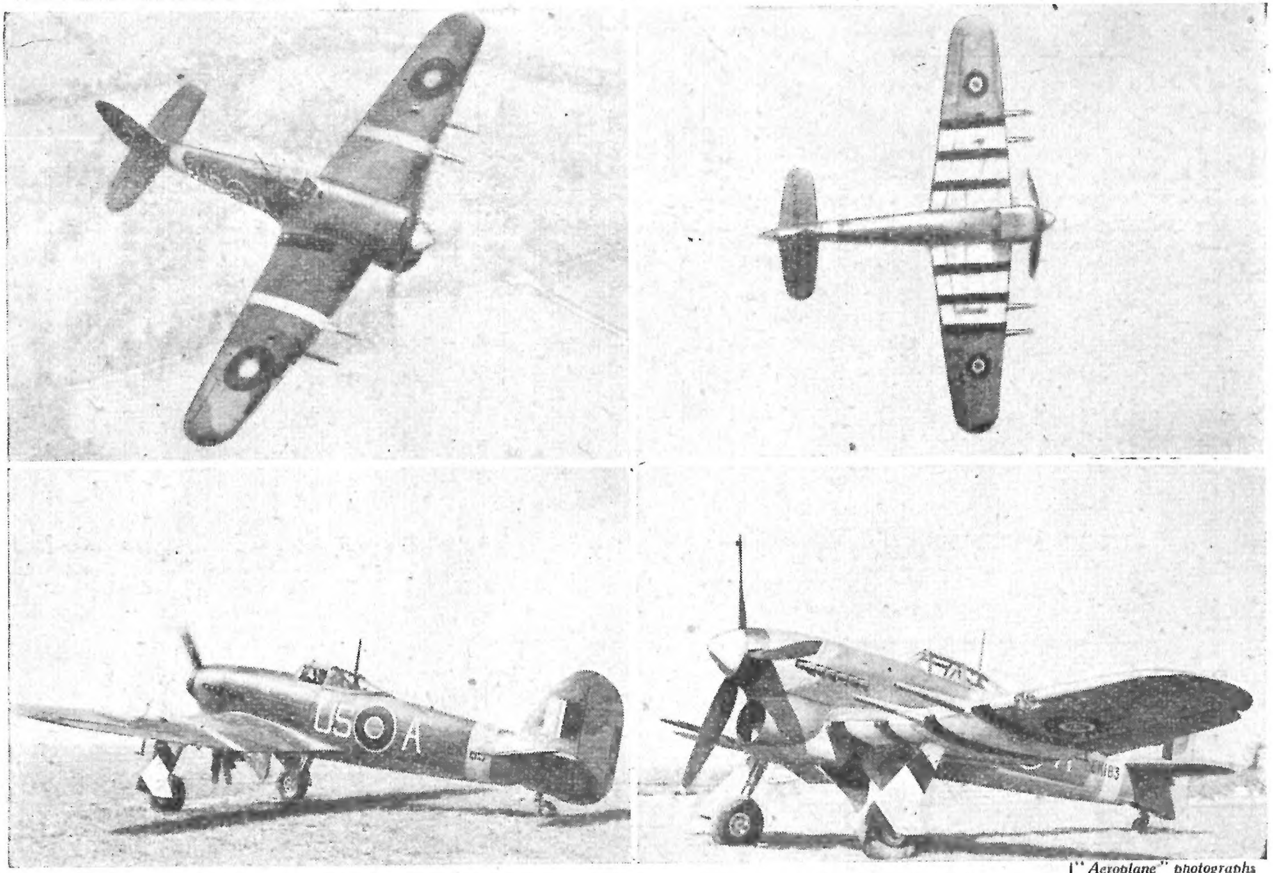
The following are for the Mosquito IV:—

DIMENSIONS.—Span, 54 ft. 2 in.; length 40 ft. 9½ in.; height, 17 ft. 3 in.; wing area, 420 sq. ft.; aspect ratio, 7.0.


NAV. LIGHT
FITTED WINGTIP
DOUBLE TOP SKIN & INTERLEAVED STRINGERS
SINGLE UNDERSKIN & STRINGERS
LANDING LIGHT
24 GAL. 32 GAL. } FUEL TANKS (REPEAT IN PORT WING)
AILERON TAB CONTROL
65 GAL. 79 GAL. } FUEL TANKS (REPEAT IN PORT WING)
TWO FUEL TANKS 68 GAL. EACH
BULKHEAD No 2
BULKHEAD No 3
BULKHEAD No 4
BULKHEAD No 5
BULKHEAD No 6
BULKHEAD No 7
FUEL TANKS VENT
JOINING STRIPS
SANDWICH SKINNING PLYWOOD BALSA PLYWOOD
FLAME SHIELD & 4 STREAMS OF COOLING AIR
OIL & COOLANT RADIATORS
COOLING AIR
TAIL SECTIONS SPIRALLY GRAINED (OPPOSITELY SPIRALLED) TO RESIST TAIL TWIST
FIRST AERIAL
TRIM TAB
NAV. LIGHT
TRIM TAB
TWO-TREAD TAILWHEEL CHECKS SHIMMYING
FLAP
FLAP JACK & CRANK
DE HAVILLAND CONSTANT SPEED HYDROMATIC AIRSCREWS
ROLLS-ROYCE MERLIN MOTOR
FLAP
LANDING LIGHT
AILERON TRIM TAB
AILERON CONTROL
AILERON
STRINGERS LESSEN TOWARDS WINGTIP
116
120
OIL & COOLANT RADIATORS
MOTOR CONTROL RODS BEHIND RADIATOR SUPPORTS
WING FRONT SPAR
COOLING AIR
CONTROLLABLE RADIATOR FLAP

Drawing by J. H. Clark

"THE AEROPLANE" Copyright



["*Aeroplane*" photographs

THE R.A.F.'s NEW FIGHTER.—The Hawker Typhoon is the first new type of single-engined fighter to go into service with the R.A.F. since the War began. The black and white stripes under the wings are to help recognition because from certain aspects the Typhoon closely resembles the Fw 190. Typhoons are flying without stripes, as well.

LESSER KNOWN TYPES—LXIV

THE HAWKER TYPHOON IB

HAWKER TYPHOON single-seat fighters have been operating with Fighter Command for some months—both as fighters and fighter-bombers. Already in the short time they have been in service they have proved to be among the most formidable aeroplanes of the R.A.F., combining a heavy fire power with a high maximum speed and, for their size and weight, excellent manœuvrability.

When the Hawker Design Team under Mr. Sydney Camm, Chief Designer of Hawker Aircraft Ltd., began the new design, provision was made for two versions, one with a 2,000 h.p. Rolls-Royce Vulture liquid-cooled X motor, the other with a 2,400 h.p. Napier Sabre liquid-cooled "H" type motor. The version with the Vulture was named the Tornado, that with the Sabre, the Typhoon. The Vulture is now out of production, but the Sabre version goes forward. One unusual feature about the installation of the Sabre is that the 24 cylinders are arranged horizontally, instead of vertically as in all other "H" type motors.

All radiators and air intakes are incorporated in the "beard" type assembly under the nose. In the centre is a large intake for the carburetter and supercharger. Around that is the oil cooler and on the outside a radiator for the motor coolant.

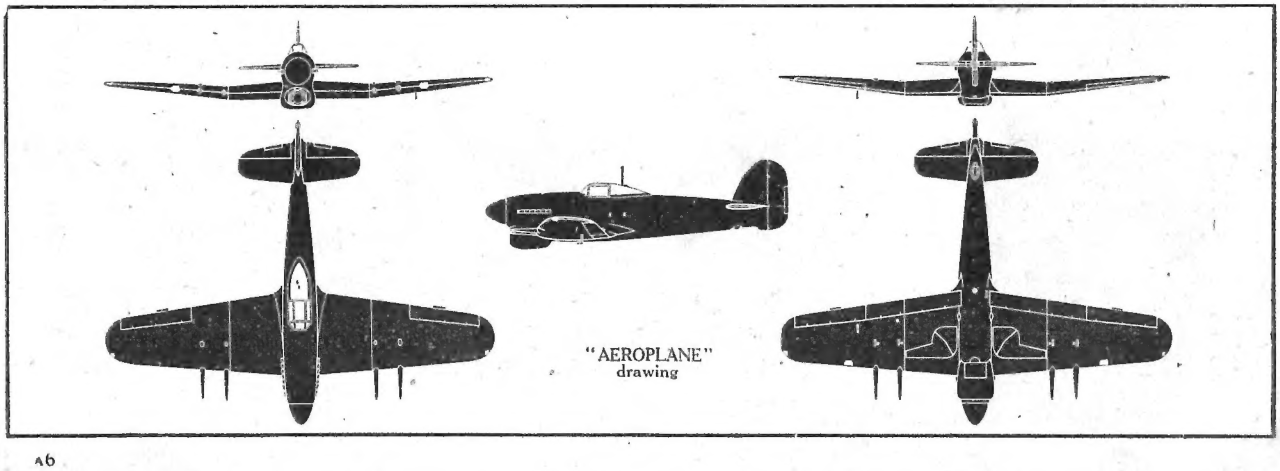
The Typhoon was intended as an all-round fighter, as was the Hurricane before it. Its speed enables it to overtake and its heavy armament of twelve 0.303-in. machine-guns (Typhoon IA) or four 20 mm. cannon (Typhoon IB) to destroy any bomber or reconnaissance aeroplane in service with the Luftwaffe. Since the inception of hit and run day raids on Southern England Typhoons have proved more than a match for the bomb-carrying Fw 190s and Me 109s and with the Mustangs, Spitfires, Whirlwinds and Mosquitoes of Army Co-operation and Fighter Commands Typhoons have been playing a big part recently in attacking by day and night ground targets in Holland, Belgium and Northern France. Already Typhoons include in their bag at least four Me 210s from the Luftwaffe squadron equipped to test them on active service.

All-metal construction is used throughout the Typhoon which has a cockpit similar in many respects to the driving seat of a large car. Entrance is gained through a door on the starboard side and the windows can be raised and lowered by turning small handles.

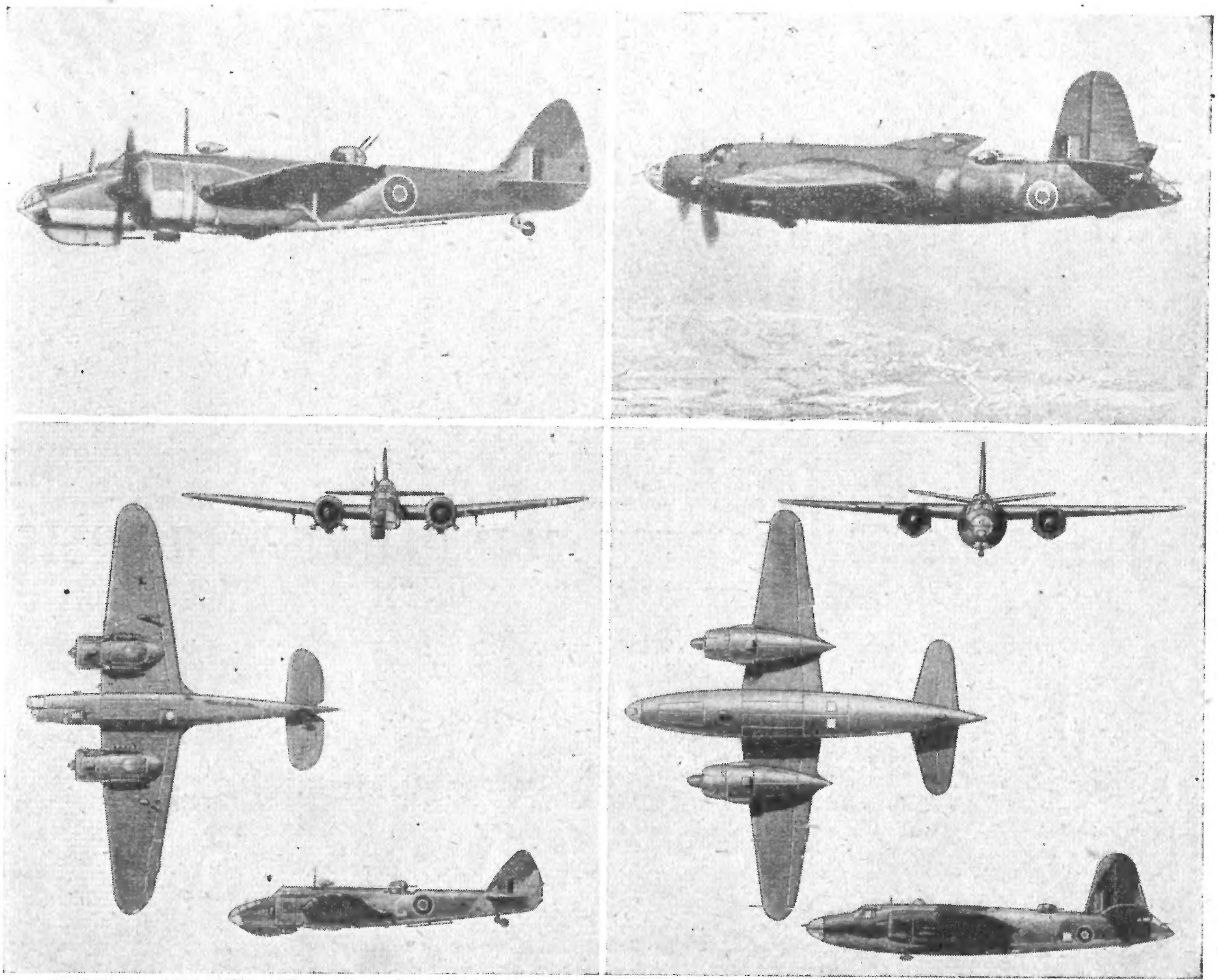
Dimensions.—Span, 41 ft. 7 in.; length, 31 ft. 11 in.; height, 15 ft. 3½ in.

Performance.—Maximum speed, more than 400 m.p.h.; landing speed (with motor on), 105 m.p.h.; landing speed (with motor off), 120 m.p.h.

Points of Recognition.—The Typhoon is a single-motor low-wing monoplane with a large radiator under the short nose. The wings of low aspect ratio have rounded tips and taper on both leading and trailing edges. In the head-on view there is slight anhedral on the centre section of the wing and dihedral on the outer wing sections. The whole of the cockpit cover is transparent and the tailplane is tapered on both leading and trailing edges with rounded tips. The tall fin has pronounced taper on the leading edge. Possible confusion:—Focke-Wulf Fw 190.

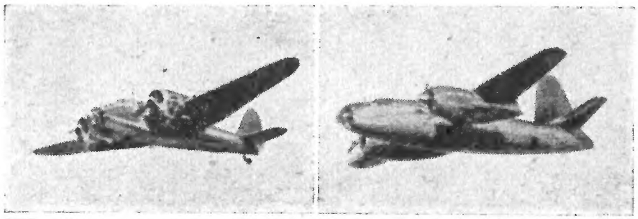


"AEROPLANE" drawing



DETAILED ANALYSIS.—The points by which the subjects of the previous recognition problems can be recognised are illustrated in the photographs and drawings by W. J. Everest, of the Bristol Blenheim VD (left) and in the Martin Marauder (right).

Aircraft Recognition

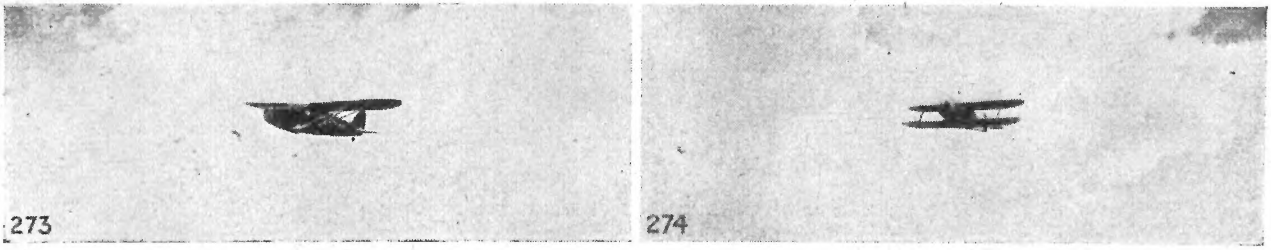


271 272

PREVIOUS PROBLEMS.—(Left) A Blenheim and (right) a Marauder.

THE BRISTOL BLENHEIM VD light bomber (two 830 h.p. Bristol Mercury XXX radial motors) and the Martin Marauder I (two 2,000 h.p. Pratt and Whitney Double Wasp R-2800-SIA4-G radial motors) were the subjects of the previous recognition tests. The Blenheim VD, which is in action in Burma and Tunisia, is a development of the famous Blenheim IV bomber. This new version, the Type 160, differs from its predecessor mainly in having a completely redesigned asymmetrical nose, beneath which is a box containing two remotely controlled machine-guns. In addition, the two-gun dorsal turret is an entirely new type and the undercarriage is fully enclosed behind doors. A few Martin Marauder I bombers are flying with the Royal Air Force in England, and many are in action with both the R.A.F. and U.S.A.A.F. in North Africa.

The B-26 Marauder is in large-scale production in the United States. The high landing speed makes it a difficult aeroplane to operate from aerodromes without prepared runways of great length. Illustrated above is the Marauder I; later versions have a revised rear gun enclosure containing two 0.5-in. machine-guns. In the air, the excessively small wings and large cigar-shaped fuselage are outstanding points of recognition. The tailplane, with its large dihedral angle, contrasts with the wing, which has only a small dihedral angle.



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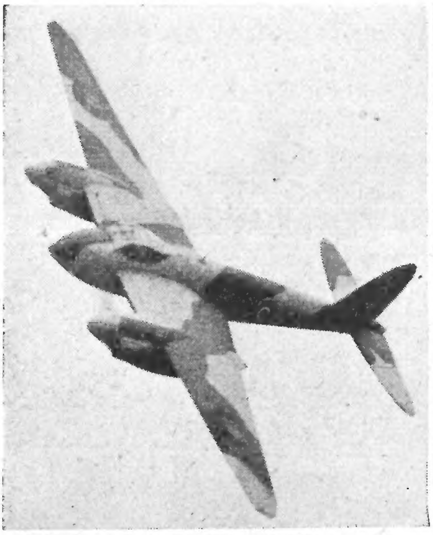
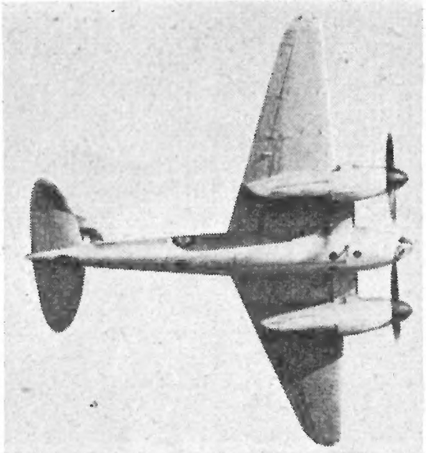
FOR IDENTIFICATION LXXXIII.—Two more photographs to give practice in the recognition of Allied and enemy aeroplanes. What they are and notes on their characteristics will be published with two more photographs on May 20.

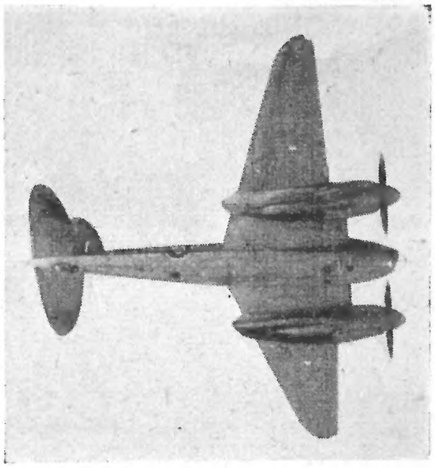


FIGHTER.—A de Havilland Mosquito II long-range fighter which differs externally from other versions in its extended guns in the non-transparent nose and the flat bullet-proof windscreen.



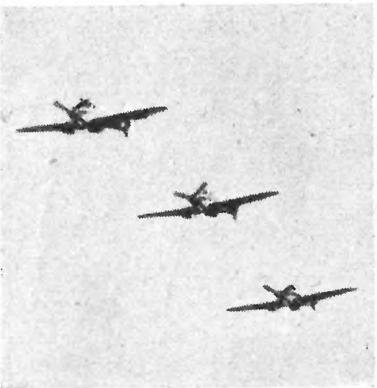
("*Aeroplane*" *photograph*)

PROTOTYPE. — The de Havilland Mosquito I prototype bomber which differed from subsequent Mark Is and later Marks in having short nacelles, a slightly smaller tailplane and a span of 52 ft. 6 in.

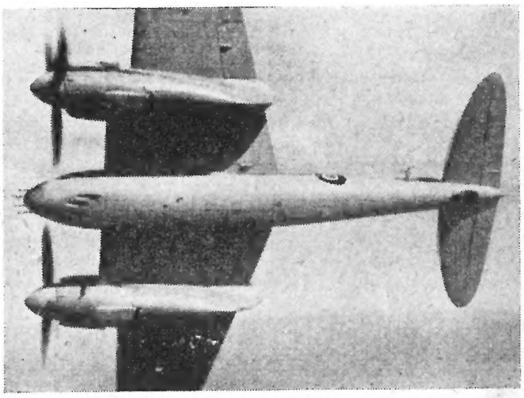


BOMBER.—A de Havilland Mosquito IV bomber with the standard long nacelles. A bomb load of 2,000 lb. can be stowed internally. It has a span of 54 ft. 2 in.

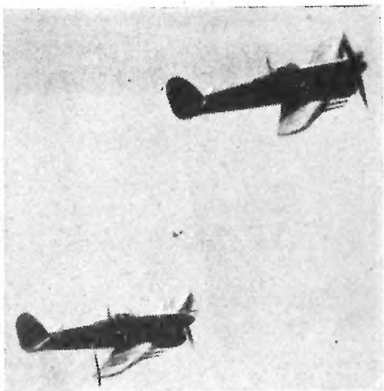
NEWS IN PHOTOGRAPHS



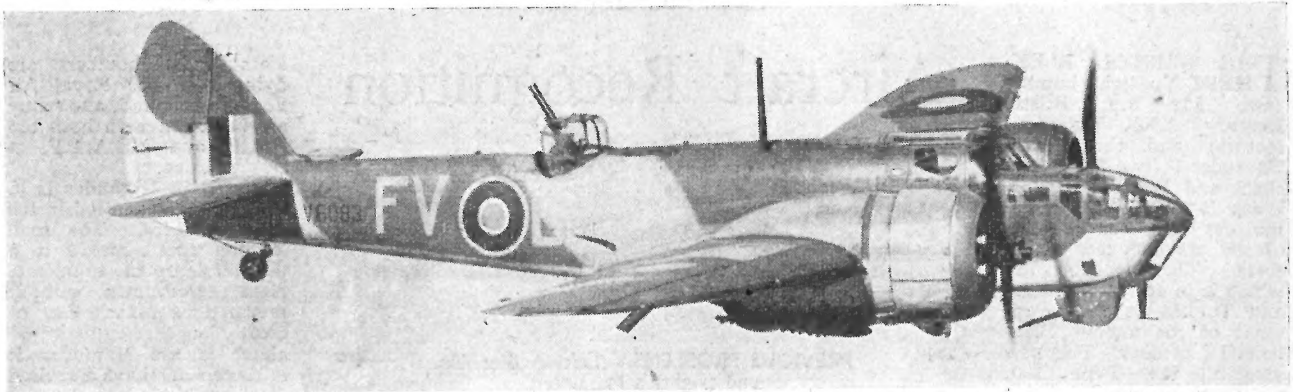
TANK-BUSTER.—A formation of Hawker Hurricane IID tank-busters armed with two 40 mm. Vickers cannon and two 0.303-in. machine-guns.



MOSQUITO'S STINGS.—A close-up of the under-side of a Mosquito fighter showing the machine-guns in the nose and the ports for the four 20 mm. cannon under the belly.

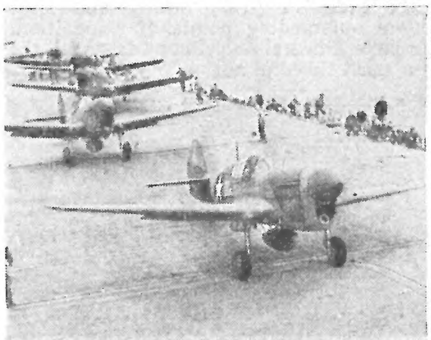


"TIFFYS."—Hawker Typhoon IB single-seat fighters, the World's most powerful single-engined fighter in service to-day. The armament is four 20 mm. cannon.

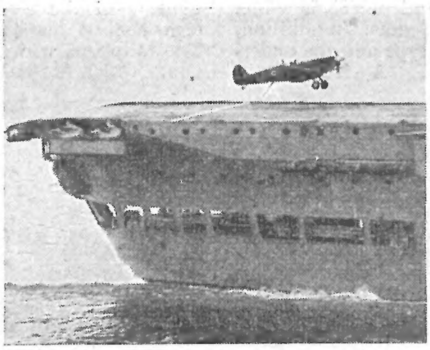


("*Aeroplane*" *photograph*)

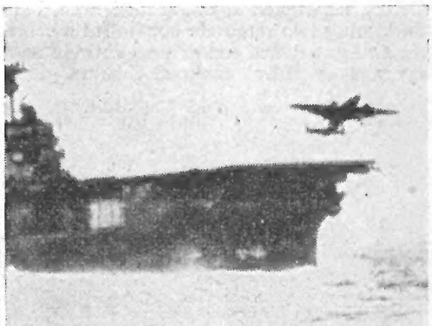
OLD STAGER.—Blenheim IV bombers are still giving good service against the Japanese in Burma. This is a new photograph of the old type.



EYRIE.—Curtiss P-40F Warhawk (Kittyhawk II) single-seat fighters run-up to take off from the deck of a United States aircraft carrier. This is the first photograph of P-40s on a carrier.



LANDING-ON.—A Supermarine Seafire about to touch down on the deck of a British aircraft carrier. The arrester-hook can be seen extended. Many Seafires are now in service.



OFF TO TOKYO.—Maj.-Gen. James Doolittle pulling off his North American Mitchell from the deck of the U.S. carrier Hornet on his way to bomb Tokyo on April 18, 1942.

THE NATIONAL ASSOCIATION OF SPOTTERS' CLUBS

GENERAL COUNCIL :

Hon. General Sec. (North):
Miss M. Duncan, 10, Eden Street, Riddrie, Glasgow.

Hon. General Sec. (South):
P. T. Sampson, 56, Forest Drive West, E.11.

Hon. Secs. of REGIONAL COUNCILS :

NORTHERN—T. Carver (pro tem.), Royal Grammar School, Eskdale Terrace, Newcastle-on-Tyne. NORTH-EASTERN—W. M. Sowerby, 9, Grange Park Place, Leeds. NORTH-MIDLANDS—R. R. Langley, 80, Cornwall Road, Kettering, Northants. EASTERN—J. E. Barnes, 140, Moulsham Drive, Chelmsford. LONDON—F. C. Palethorpe, 38, Bridgewater Road, Alperton, Middx. SOUTHERN—Col. Beadon, Acting R.R.S.O., Marlborough House, Parkside Road, Reading. SOUTH-WESTERN—E. Griffiths, 25, Charlton Avenue, Filton, Bristol, I. WELSH—W. H. Young, 21, Beaufort Place, St. Julians Park, Newport, Mon. MIDLAND—G. C. Matthews, 239, The Broadway, Dudley, Worcs. NORTH-WESTERN—H. Pearson, 12, Plymouth Street, Oldham. SCOTTISH—Miss M. Duncan, 10, Eden Street, Glasgow. SOUTH-EASTERN—P. Chinery, "Little Hemingfold," Battle, Sussex.

NEW SPOTTERS' CLUBS

WE HAVE RECEIVED notice of the formation of the following new Spotters' Clubs:—

No. 592.—**G.W.R. Aldermaston.**—(Hon. Sec.: R. E. Bird, Chief Accountant's Office (A), G.W.R. Aldermaston, Berks.) *Southern Region (No. 6).*

No. 593.—**Albion Works S.C. Willenhall.**—(Hon. Sec.: H. J. G. Millichip, c/o John Harper and Co. Ltd., Albion Works, Willenhall, Staffs.) *Midland Region (No. 9).*

No. 594.—**No. 1766 (Mallaig-Morar) Flt. A.T.C. S.C.**—(Hon. Sec.: Alex Stewart, Primrose Cottage, Mallaig.) *Scottish Region (No. 11).*

No. 595.—**Solihull Civil Defence S.C.**—(Hon. Sec.: G. A. Strange, 87, Hurdis Road, Shirley, Solihull, Birmingham.) *Midland Region (No. 9).*

No. 596.—**Dunlop Rim and Wheel S.C.**—(Hon. Sec.: A. H. Freer, 5, Romford Road, Holbrooks, Coventry.) *Midland Region (No. 9).*

No. 597.—**Southern Rly. Lancing Section.**—(Hon. Sec.: R. E. Nicholson, 53, Ham Road, Worthing, Sussex.) *South Eastern Region (No. 12).*

No. 598.—**H.M.T.C. Spotters' Club.**—(Hon. Sec.: Eric Birch, 16, Lorne Avenue, Waterloo Street, Hall, Yorks.) *North Eastern Region (No. 2).*

No. 599.—**Cullingworth S.C.**—(Hon. Sec.: J. A. Stubbs, 4, Clayton Terrace, Cullingworth.) *North Eastern Region (No. 2).*

No. 600.—**Victoria Works S.C.**—(Hon. Sec.: M. Cleary, Holmdene, Baghill Lane, Pontefract.) *North Eastern Region (No. 2).*

No. 601.—**Tube Investments Western Group.**—(Hon. Sec.: B. H. Tarr, 7, Hawfield Road, Oakham, Dudley.) *Midland Region (No. 9).*

No. 602.—**No. 1189 Sqdn. A.T.C.**—(Hon. Sec.: A. S. Palmer, 70, Hayling Avenue, Copnor, Portsmouth.) *Southern Region (No. 6).*

FIFTEENTH EXECUTIVE COMMITTEE MEETING

SIX MEMBERS of the Executive Committee of the General Council were present at the fifteenth meeting of the committee held in London on April 27, Mr. P. G. Masefield, Hon. Organizing Secretary of the N.A.S.C., and Mr. M. R. T. Edwards, Hon. Treasurer of the N.A.S.C., were also present. Mr. S. F. Sabin was in the chair.

After the minutes of the fourteenth meeting had been accepted members of the committee reported on developments during the past two weeks. Progress was reported in connection with the ex-librarian of the N.A.S.C., the 1943 A.G.M. was discussed, and Mr. Sampson said he had placed an order for the new questionnaires. Mr. Edwards regretted that he had been unable to attend the recent meeting of Regional Raid Spotting Officers.

Three members of the committee had been present at the Annual General Meeting of the Southern Regional Council on April 17 and they presented a full report of the proceedings at that meeting.

Two resolutions from the North-Eastern Regional Council were discussed at length. Proficiency certificate test markings are covered by the Basic 64 list published elsewhere in this issue.

Instead of six Aircraft Recognition journals, all non-raid-spotter clubs will now receive only three each month.

A lengthy discussion resulted in a decision to wind up the Lone Spotters' Club if no suitable Hon. Secretary is forthcoming.

The question of dividing the Association into senior and junior sections was again brought up for discussion in the light of recent affiliations by numbers of A.T.C. and school clubs.

A draught syllabus, prepared by the recent R.R.S.O. meeting, for Club Training Officers to use in their clubs was discussed and one or two small amendments were made.

SOUTHERN REGION

AT THE RECENT Annual General Meeting of the Southern Region Col. Beadon, Acting Raid Spotting Officer in the Southern Region, was appointed Regional Hon. Secretary (pro tem.). All communications should now be addressed to him. (Address above.)

LIBRARY IN SOUTH-EASTERN REGION

THE SOUTH-EASTERN Regional Council is proposing to start a Regional Library to meet many enquiries for Test Cards, etc. To enable a nucleus of material to be built up, Clubs in the Region (or others outside if they feel so disposed) are asked to turn over any spare sets of Test Cards, all Grades (particularly First Class) to the Librarian, together with any other material such as photographs, books and the technical journals as are available.

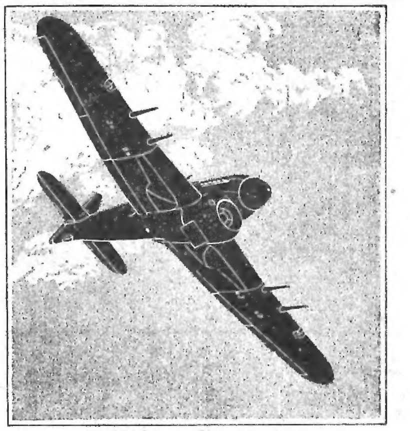
In view of the shortage of material and the increasing number of Clubs, such a Library should prove of value, and it is hoped that as many Clubs as possible will help the scheme and so help themselves. Mr. P. Moxey, 164, Middle Deal Road, Deal, Kent, is handling all material in connection with the Library and Clubs should send their enquiries and any material they have available, direct to him so that a register may be compiled.

LONDON REGION MODEL CONTEST

THE SECOND SCALE MODEL CONTEST organized by the Competitions Sub-Committee of the London Regional Council, will take place in the Lecture Theatre of the Science Museum, South Kensington, on Monday, May 17, at 18.45 hrs. This contest is open to all N.A.S.C. members in the London Region and details have been circulated to all Club Hon. Secretaries.

A First Class Proficiency Test will be held during the meeting. Club Hon. Secretaries can obtain further information from Mr. B. Dibden, 102 East Dulwich Grove, London, S.E.22.

PHOTOGRAPHIC SILHOUETTES—XXVIII



A Hawker Typhoon IB.

CONTESTS

ANOTHER LONDON REGION Aircraft Recognition Contest was held in the Science Museum, South Kensington, on April 21. Among the 200 persons present were representatives of the Ministry of Home Security including the Deputy Director General for Civil Defence, a number of Regional Raid Spotting Officers and Major MacArthur, London Regional Alarm Controller. Col. R. A. Linton, Commanding Officer of the Army School of Aircraft Recognition, was also present.

Thirty teams of three competed and the Sabin Trophy was won by S.C. 401 (Ilford Wing A.T.C.) with a score of 140 points out of a possible 150. S.C. 91 (Denham R.S.C.) won the L.R.C. Trophy with a score of 138 points. Mr. J. G. Miller was the question master.

After the L.R.C. contest a Recognition Bee between the Army School of Aircraft Recognition and the London Region was conducted by Mr. A. Laws. The Army was defeated by 30½ points to 24½.

CLEETHORPES recently organized a recognition bee between local units of the Air Sea Rescue Service, A.T.C. and Anti-Aircraft Command, with other teams from S.C. 67, Clee Grammar School, and the old Clee fellowship. The Air-Sea Rescue Service team came out on top with a score of 28 points out of a possible 30. Flt. Lt. J. Wilde, R.A.F. was the question master.

S.C. 296 (Sutton Coldfield Grammar School J.T.C.) recently held a Modelling Competition. There were about 25 entrants, and the first prize (of savings stamps) was won by T. C. Slocombe with a scale model of a Short Stirling. All the models showed a high standard of workmanship and were later displayed in a local shop.

THE WINNING MODEL AT SUTTON COLDFIELD

FORTHCOMING EVENTS

May 6

Glasgow.—Albion St.—19.00 hrs.—(S.C. 35.) (All local Clubs invited.)
Harrow.—Kodak Social Centre.—19.30 hrs.—(S.C. 75.)
Doncaster.—C.D. Instruction Room, Frenchgate.—A.G.M.—19.00 hrs.—(S.C. 106.)
Westminster.—Thorneycroft House.—18.00 hrs.—(S.C. 142.)
Seaham.—Rock House.—18.30 hrs.—(S.C. 230.)
Crosby.—St. Mary's College.—19.00 hrs.—(S.C. 320.)
Battersea.—Men's Institute, Latchmere Rd., S.W.11.—19.45 hrs.—(S.C. 483.)
Beaconsfield.—Council Hall.—(S.C. 556.)

May 7

N. Birmingham.—No. 11, Poppy Lane.—19.15 hrs.—(S.C.15.)
Kentish Town.—North-Western Polytechnic, Prince of Wales Rd., N.W.5.—(S.C. 16.)
Sunderland.—Sons of Temperance Room, Norfolk St.—19.30 hrs.—(S.C. 37.)
Hoddesdon.—Clock House.—19.30 hrs.—(S.C. 128.)
Leeds.—College of Technology.—18.30 hrs.—(S.C. 148.)
Oxford.—City Police Stn.—19.00 hrs.—(S.C. 162.)
Preston.—Central Police Stn.—19.30 hrs.—(S.C. 249.)
Croydon.—Fairfield Training Centre, the Car Park, Park Lane.—18.45 hrs.—(S.C. 404.)

May 9

Watford.—Public Library.—A.G.M.—10.30 hrs.—(S.C. 118.)
Hendon.—Technical College.—19.30 hrs.—(S.C. 124.)
Wallington.—A.T.C. Hdqrs., Woodcote Rd.—20.00 hrs.—(S.C. 367.)

May 10

Beckenham.—Bromley Road School.—19.30.—(S.C. 110.)
Downham.—Burnt Ash School.—19.30 hrs.—(S.C. 454.)

May 11

London.—Meeting of Executive Committee of General Council.—Bowling Green Lane, E.C.1.—18.00 hrs.
Southend.—A.R.P. Hdqrs., 120, Victoria Av.—A.G.M.—19.00 hrs.—(S.C. 1.)
Stoke-on-Trent.—Lecture Hall, Back Glebe St.—19.00 hrs.—(S.C. 60.)
Guildford.—County Technical College, Stoke Park—19.30 hrs.—(S.C. 150.)
N. London.—Northern Polytechnic, Holloway Rd., N.7.—19.00 hrs.—(S.C. 156.)
Crosby.—St. Mary's College.—19.00 hrs.—(S.C. 320.)

May 12

London.—2nd Club Training Officers' Course.—Lecture No. 2, Practical Lecturing.—Regional Staff School, Sth. Kensington.—19.00 hrs.
Rickmansworth.—112, High St.—19.30 hrs.—(S.C. 81.)
Walton-on-Thames.—Anglo-Iranian Oil Co., Ltd., New Zealand Av.—(S.C. 96.)
Dagenham.—Ford Sports Pavilion.—19.00 hrs.—(S.C. 99.)
Sheffield.—Geo. Senior and Sons, Ltd., Ponds Forge, Sheaf St.—19.00 hrs.—(S.C. 178.)
Wigan.—Town Hall.—19.15 hrs.—(S.C. 266.)

May 13

Harrow.—Kodak Social Centre.—19.30 hrs.—(S.C. 75.)
Doncaster.—C.D. Instruction Room, Frenchgate.—19.00 hrs.—(S.C. 106.)
Seaham.—Rock House.—18.30 hrs.—(S.C. 230.)
Crosby.—St. Mary's College.—19.00 hrs.—(S.C. 320.)
Battersea.—Men's Institute, Latchmere Rd., S.W.11.—19.45 hrs.—(S.C. 483.)

May 14

Hoddesdon.—Clock House.—A.G.M.—19.30 hrs.—(S.C. 128.)
Stapleford.—Constitutional Club.—19.00 hrs.—(S.C. 159.)
Preston.—Central Police Stn.—19.30 hrs.—(S.C. 249.)
Croydon.—Fairfield Training Centre, the Car Park, Park Lane.—18.45 hrs.—(S.C. 404.)

May 16

Oxford.—City Police Stn.—18.00 hrs.—A.G.M.

May 17

London.—Second Regional Model Contest.—Science Museum, Sth. Kensington.—18.45 hrs.—(L.R.C.)
Wallington.—A.T.C. Hdqrs., Woodcote Rd.—20.00 hrs.—(S.C. 367.)

May 18

Guildford.—County Technical College.—19.30 hrs.—(S.C. 150.)
N. London.—Northern Polytechnic, Holloway Rd., N.7.—19.00 hrs—(S.C. 156.)
Crosby.—St. Mary's College.—19.00 hrs.—(S.C. 320.)

May 19

London.—2nd C.T.O.'s Course.—Test Lectures.—Regional Staff School, Sth. Kensington.—19.00 hrs.
Blackfriars.—The Cinema, Unilever House.—A.G.M.—18.00 hrs.—(S.C. 12.)
Streatham Common.—St. Joseph's College, Crown Point.—(S.C. 13.)
Belfast.—45, Howard St.—(S.C. 151.)
Sheffield.—Geo. Senior and Sons, Ltd., Ponds Forge, Sheaf St.—19.00 hrs.—(S.C. 178.)
Wigan.—Town Hall.—19.15 hrs.—(S.C. 266.)

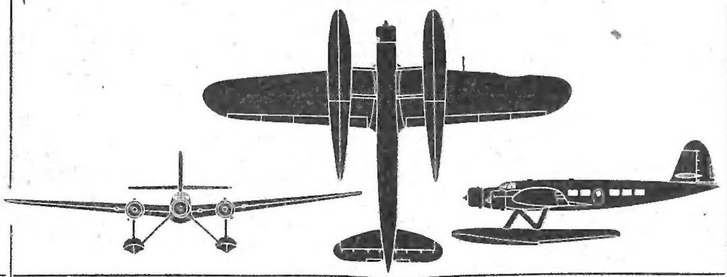
May 20

London.—2nd C.T.O.'s Course.—Test Lectures.—Regional Staff School, Sth. Kensington.—19.00 hrs.
Harrow.—Kodak Social Centre.—19.30 hrs.—(S.C. 75.)
Westminster.—Thorneycroft House.—18 00 hrs.—(S.C. 142.)

AIRCRAFT COMPARISONS—LXXXII CANTIERI RIUNITI

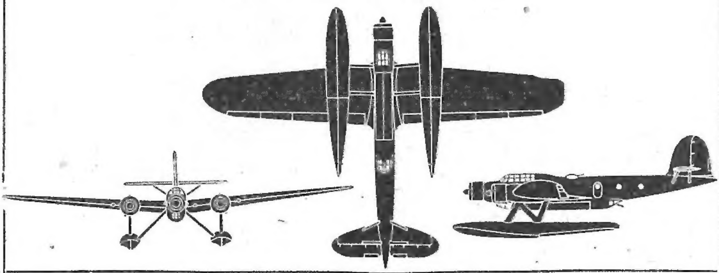
CANT Z.506

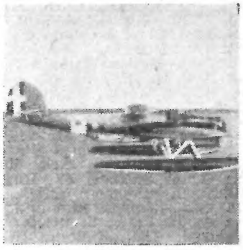
Span: 87 ft. 3 in.
Length: 62 ft. 4 in.
Height: 22 ft. 2 in.
Loaded Weight: 23,100 lb.
Max. Speed: 236 m.p.h. at 13,120 ft.
Three 770 h.p. Alfa-Romeo 126 RC.34 radial motors. (Other motors fitted.)



CANT Z.506B AIRONE

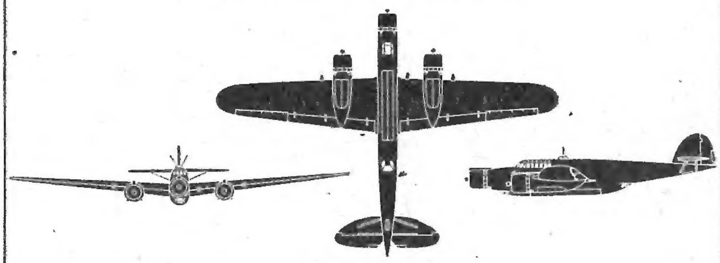
Span: 87 ft. 3 in.
Length: 63 ft. 6 in.
Height: 22 ft. 0 in.
Loaded Weight: 27,100 lb.
Max. Speed: 231 m.p.h. at 13,000 ft.
Three 770 h.p. Alfa-Romeo 126 RC.34 radial motors.





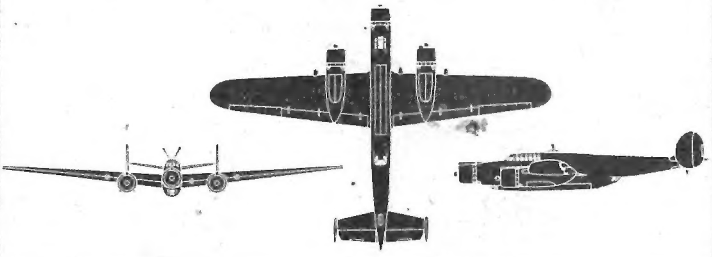
CANT Z.1007bis ALCIONE

Span: 81 ft. 4 in.
Length: 60 ft. 4 in.
Height: 17 ft. 1 in.
Loaded Weight: 28,260 lb.
Max. Speed: 270 m.p.h. at 13,000 ft.
Three 1,000 h.p. Piaggio P XI RC.40 radial motors.



CANT Z.1008

Span: 81 ft. 4 in.
Length: 60 ft. 6 in.
Height: 17 ft. 1 in.
Loaded Weight: Approx. 30,000 lb.
Max. Speed: Approx. 265 m.p.h. at 13,000 ft.
Three 1,000 h.p. Piaggio P XI RC.40 radial motors.



CANTS.—The Cant Z.506 civil floatplane, designed by Signor Zappata, carried 16 passengers and was produced in various forms employing Wright Cyclone as well as the standard Alfa-Romeo power units. A modified civil version, complete with the bulge which now houses the bomb or torpedo load, was named the Z.506B and was the type chosen for military conversion. The landplane Z.1007bis and Z.1008 (once called Z.1007ter), employing the same wooden construction as the floatplane, are more powerful developments of the much-used Cant Airone.

THE SPOTTERS' GLOSSARY OF AERONAUTICAL TERMS

WATER LINES.—The lines of a flying-boat, such as keelson and chines, which determine its behaviour when water-borne.

WATER SPOUT.—The equivalent of a tornado over water. It is visible because of condensation produced by the lowering of pressure within the core.

WATER TANKS.—Special model testing tanks for ascertaining in advance the probable behaviour of flying-boat hulls when water-borne.

WEATHER.—The state of the atmosphere with reference to climatic conditions.

WEDGE.—An area of high pressure radiating from an anticyclone, which when plotted as isobars appears as a wedge.

WEIGHT.—The relative mass of a body or the relative reaction on a body caused by some attractive force such as gravity.

WETTED AREA.—In aerodynamics, the total area of an aeroplane or airship exposed to airflow.

WHIRLWIND.—A small region of air revolving rapidly round a low-pressure core and acting for some hundreds of feet up from the ground.

WIND.—Air in motion in the atmosphere.

WINDMILL.—A term at one time used to describe the action of an airscrew when revolving freely under the forward air speed of an aeroplane but without motor power. Also a colloquial term for the rotor of a gyroplane.

WIND CONE.—An indicator of wind strength and direction erected on an aerodrome. It consists of an open-ended fabric sleeve attached to the top of a mast. Also called Wind Sock.

WIND "T."—A horizontal T-shaped marker placed on the surface of an aerodrome to indicate wind direction to the pilots of incoming aeroplanes. The cross stroke of the "T" is up-wind.

WIND TUNNEL.—A channel or chamber in which experiments are made to collect aerodynamic data. A steady stream of air is blown through the tunnel by a large fan at a predetermined speed. This air flow reacts on aerofoil sections or aeroplane models mounted on sensitive balances which measure the force of reaction. Corrections have to be made for scale effect to facilitate the application of the data to the design of aeroplanes. Some wind tunnels now in use can accommodate complete aeroplanes of moderate size for aerodynamic examination.

(To be concluded)

CORRESPONDENCE

CONTROL OF THE HESTON RACER

NOW that the story of the Napier-Heston Racer has been released, I would like to put on record an interesting and important detail of the brief seven minutes' flight which will otherwise be lost, and which may be of value to those interested in aerodynamical research, and which will certainly be of value to the pilot of the second Racer, if it is ever completed for flight.

The elevator control, which had been satisfactory during taxi-ing trials, was again adequately effective up to the point when the aeroplane became airborne but, from this point on, the elevators ceased to be powerful enough to overcome the fore-and-aft control which appeared to be exercised by the varying airflow caused by engine revolutions. In other words: irrespective of the position of the control column, a decrease of r.p.m. caused the nose to fall, and an increase lifted the nose to the horizon.

This was discovered just after take-off, when the aeroplane had been thrown into the air a trifle prematurely by some irregularity of the ground with the nose rather higher in the air than desired. It was immediately found that the use of elevator would not lower the nose on the horizon. This was so marked that the undercarriage was not retracted, as it was felt that the drag of the wheels below the wing was probably preventing the angle of climb from being steeper.

It was then that one discovered (about 30 seconds after take-off) that the engine coolant had reached its maximum permissible temperature and was still rising. This prevented an interesting flight from being protracted, the next valuable few minutes being almost entirely taken up in manœuvring for position to approach to land, and the unfortunate finale spoiled the chances of obtaining more data.

There is thus a special reason for hope that the second aeroplane may be completed and flown so that the cause of this peculiarity may be definitely attributed to either the incorrect positioning of the tailplane or to the disturbance caused by the relation of the open cooling duct vent to the elevators.

G. L. G. RICHMOND.

ASPECT RATIO

"ASPECT RATIO "—I should be very grateful if you would kindly clear up a small point for me. In THE AEROPLANE SPOTTER one reads that the aspect ratio of a Lancaster is eight—I assume that this is the result of the span divided by the chord.

The span is a fixed dimension from wing tip to wing tip. The chord is not quite the same; in the case of a tapered wing, the chord at roots would be a very different dimension to that at tips.

I assume that when calculating the aspect ratio the measurement is taken at some fixed place, such as the outside measurement, usually at the wing root, but this would be influenced by large fillets (as in the Oxford) or "cut-outs" (as in the He 111K). T. G. GREEN.

[The formula for obtaining aspect ratio is to divide the square of the span by the gross wing area. Thus, if the span is 100 ft. and the wing area 1,000 sq. ft., the aspect ratio is (100 × 100) ÷ 1,000, that is 10,000 ÷ 1,000 = 10. This is true for all wing shapes: elliptical, tapered, with cut-outs, etc. The span divided by the chord gives the correct aspect ratio only for untapered rectangular wings with square-cut tips.—ED.]

MITCHELL v. MARAUDER

I AM sorry to inform you that I do not agree with you concerning your statement in THE AEROPLANE SPOTTER of April 22 that the North American Mitchell is a good deal ahead of the Martin Marauder in all-round efficiency. I admit that the armament of the Mitchell is heavier than the Marauder, but the latter carries a heavier bomb load and is 46 m.p.h. faster. You stated in "Aircraft Identification Part IV" that one of the types awaited with the greatest interest and highest expectations was the Marauder. R. SAVAGE.

[A little knowledge is a dangerous thing. All expectations are not fulfilled. Speeds sometimes do not work out as forecasted. Such features as take-off, landing, general flying characteristics, etc., also influence the over-all estimate of an aeroplane's operational efficiency.—ED.]

AFTER THE WAR

MR. ANDREWS, in his article "The Origins of Aircraft Recognition—III," states: ". . . the moral seems to be, therefore, that Aircraft Recognition should not be put on the shelf once more when the War is over, but kept going as a potential weapon were it ever needed again."

With that statement I am most strongly in agreement, and I should like to enlarge upon it by suggesting that there should be a National organisation based on the present National Association of Spotters' Clubs and the late Royal Observer Corps Club, the chief aim being the perpetuation of the study of Aircraft Recognition and the maintenance at least somewhere in the country of something approaching present-day standards of proficiency.

Although many Members of these organisations belong to them only because it is their business to know Aircraft Recognition and its allied subjects, there must also be an equally large number whose enthusiasm and interest in aircraft is their chief incentive to membership.

It is upon this latter class there falls the responsibility of "keeping Aircraft Recognition going" after the War.

Naturally the membership of an organisation such as I suggest could not by a long way equal the present membership of the N.A.S.C. and the R.O.C. as it is probable that many Clubs, formed at a time of great necessity, will close down when there ceases to be pressing need for their continued existence, but there should, nevertheless, still remain adequate membership for a Nation-wide Aircraft Recognition Association. The number of Branches would naturally be limited and meetings less frequent, but if these Branches were carefully situated in the principal locations of membership, attendances should present no difficulty.

The chief point to be borne in mind is that in our Aircraft Recognition (and there is little doubt that the standard of proficiency reached in Great Britain is higher than that reached anywhere else in the World) we have a very powerful weapon of defence. Let us not allow it to go the same way as it and everything else went after the last War. Let us keep a keen edge on our blade—keep it free from rust and corrosion, that we may use it when and where necessary at any time in the future.

PETER D. SNOW
(ex-Walton and Weybridge S.C.).

[We agree most heartily. We hope that after the War many who have been introduced to the fascination of aeronautics in its many forms will want to continue their interest. The more people who have a real understanding of Aviation after the War and a real interest in it the better for Great Britain and the Empire as a whole. The subject is of vital importance.—ED.]

THE FIAT A.S.6

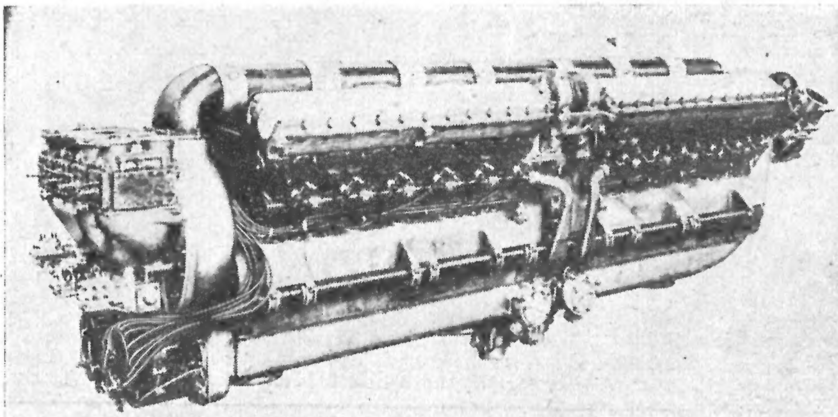
WITH REFERENCE to Famous Aircraft IX—the Macchi-Castoldi 72, in THE AEROPLANE SPOTTER of April 22. It is stated that the crankshaft of the rear unit passed through the hollow crankshaft of the front unit.

From this explanation it would appear that the two engines had different directions of rotation and that the propeller shaft from the rear unit passed through the hollow crankshaft of the front unit. This, of course, is impossible as the shaft from the rear engine would close up the throws of the front engine's crankshaft and lock the connecting rods.

It would be interesting to know how the drive from the rear engine was actually led around the front engine to the airscrew, especially in view of the difficulties spoken of in connection with the long propeller shaft of the Bell Airacobra, which, on the face, appears a much simpler proposition.

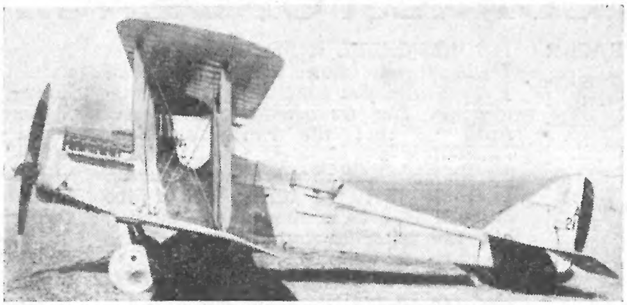
L. ANDERTON.

[The drive from the rear unit was taken through gearing into a shaft running between the Vee of the cylinder blocks of the front unit. The drive from the front unit was brought up in a similar manner and the shaft from the rear unit passed through the hollow shaft of the front unit.—ED.]



TANDEM.—The Fiat A.S.6 engine which gained the World's Speed Record in the Macchi-Castoldi M.C.72, in 1934.

FAMOUS AIRCRAFT—X


THE AIRCO D.H.4—1917-18.

AIRCO D.H.4 two-seat day-bombers were the fastest aeroplanes of any type in squadron service during the Great War of 1914-18—just as the D.H.98 Mosquito is to-day. With the 375 h.p. Rolls-Royce Eagle VIII the D.H.4 had a top speed of 143 m.p.h. at sea level. With full load of bombs and ammunition it achieved 125 m.p.h. Not only were D.H.4s in production at a rate of some hundreds a month in Great Britain in 1918, but a total of 4,587 were built in the U.S.A. up to Dec., 1918.

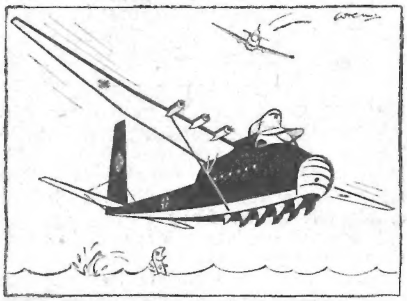
The D.H.4 was in fact the first aeroplane designed specifically for day-bombing. Previously reconnaissance aircraft had been converted to carry bombs. On Mar. 6, 1917, No. 55 Squadron, Royal Flying Corps, received the first batch of D.H.4s to go overseas. They had the 250 h.p. Rolls-Royce 12-cylinder liquid-cooled Vee motor, later called the Eagle. Shortly afterwards No. 2 Squadron, R.N.A.S., began to use D.H.4s from Dunkirk for photographic reconnaissance, attacking enemy shipping and bombing. In four days in Aug., 1918, D.H.4s of No. 205 Squadron, R.A.F., flew 324 hrs. 13 mins. and dropped 16 tons of bombs.

Many other outstanding successes were performed, including the destruction of the super-Zeppelin L.70, with Strasser, the German Naval Airship Service C.-in-C. on board, over the North Sea, and the bombing of the Goeben, in the Ægean Sea.

Captain Geoffrey H. de Havilland designed the D.H.4 for the Aircraft Manufacturing Co. in 1916. It was fitted with a variety of motors from the 200 h.p. BHP, Raf 3a and Fiat up to the 400 h.p. Liberty. The pilot, who was armed with one fixed Vickers gun, sat well forward in a comfortable cockpit. Between him and the observer, some four feet farther back, were the fuel tanks, which led to the name "Flaming Coffin" being unjustly bestowed on D.H.4s. The observer had two Lewis guns on a Scarff ring mounting.

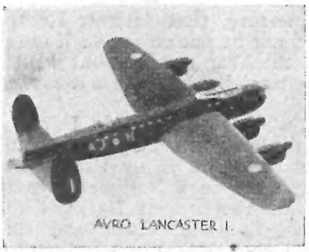
The following figures are for the D.H.4 (375 h.p. Rolls-Royce Eagle VIII):—Span, 42 ft. 5 in.; wing area, 435 sq. ft.; loaded weight, 3,400 lb.; max. speed, 143 m.p.h.; max. bomb load, 230 lb.

ODDENTIFICATION—CVI


The Messerschmitt Me 323.

DO YOU KNOW?—LIV

1. A low-wing monoplane fitted with a Napier Rapier motor?
2. An obsolescent single-seat German biplane dive bomber?
3. The number of guns in a Hurricane IID?
4. The fixed forward firing armament of the Ventura I?
5. Two two-motor low-wing civil British monoplanes fitted with D.H. Gipsy Six motors?
6. Why black and white stripes are painted on the underside of the wings of the Typhoon?
7. The British name for the Grumman OA-9?
8. The largest gun ever fitted to a British flying-boat?
9. The designer of the "Gipsy Minor"?
10. The use of the Mosquito III?
11. A British 12-cylinder inverted-Vee motor?
12. The U.S. Navy designation of the Vought-Sikorsky Corsair?
13. The armament and number of turrets on a Sunderland II?
14. Which is the faster in service—the Marauder or the Boston?


AVRO LANCASTER I.
The above illustration of the Avro Lancaster I completes Spotters' A.B.C.—VI, Spaces were left for both the Manchester and Lancaster. An illustration of the Manchester to the correct size was published on March 12, 1942.

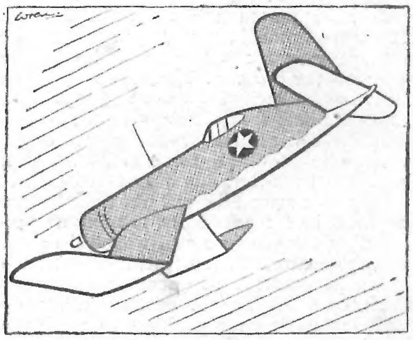
KINGSTON MODEL CONTEST

A MODEL AIRCRAFT COMPETITION held recently by S.C. 183 (Kingston and District) was won by B. Crosby with a model of a Boeing Fortress II. This was the second contest for the Trophy presented to the club by H. G. Lord, the club's promoter, when he joined H.M. Forces.

SOLUTION TO "DO YOU KNOW?"—LIII

1. Fleet, de Havilland, Boeing, Miles and Curtiss, Fairey.
2. Catalina; Mariner.
3. (i) Coastal Command, glider towing, parachute transport. (ii) Air-sea rescue, towing duties, Army co-operation. (iii) Advanced training and target towing.
4. (i) S.E. 200; Latécoère 631; Potez 161. (ii) By 222; Me 323. (iii) L.760.
5. Coronado, Catalina, Liberator.
6. The Heston-Napier Racer.
7. (i) Rolls-Royce; Miles. (ii) Wright; Westland.

ODDENTIFICATION—CVII


The Vought-Sikorsky Corsair I.

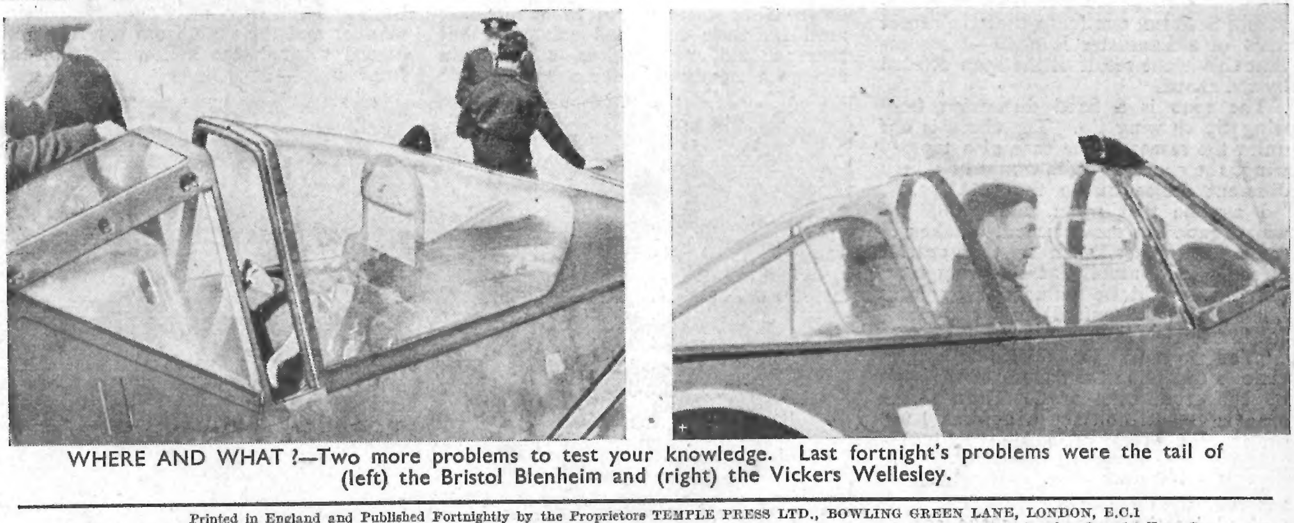
8. Eight 0.5-in. machine-guns or four 20 mm. cannon.
9. Fairchild Yankee Doodle.
10. Blohm und Voss Bv 142.

BACK ISSUES AVAILABLE

COPIES of any or all of issues Nos. 34-46 inclusive and of Nos. 62-78 inclusive of THE AEROPLANE SPOTTER may be had from the Back Issue Exchange in exchange for an equal number of other issues, together with 6d. in stamps to cover expenses. Where possible, the numbers of any issues which would be acceptable instead of those ordered should be given in case stocks are exhausted.

For the moment no other issues are available, and applications for them cannot be considered.

Copies and all correspondence should be sent to Mr. P. T. Sampson, 4, Ampthill Rise, Sherwood, Nottingham.


WHERE AND WHAT ?—Two more problems to test your knowledge. Last fortnight's problems were the tail of (left) the Bristol Blenheim and (right) the Vickers Wellesley.

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